

**Naval Air Warfare Center, Aircraft Division  
Trenton, New Jersey**

**Decision Document  
for  
Installation Restoration  
Site 1 Soil**

**9 September 1998**

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## DECLARATION STATEMENT

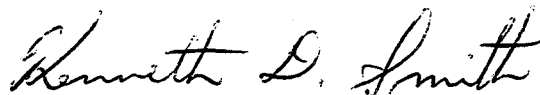
This decision document presents the basis for the selected alternative to address soil at Site 1 at the Naval Air Warfare Center, Aircraft Division, Trenton (NAWCADTRN). This decision is based on information contained in the Installation Restoration Program Site 1 Source Sampling Report (EA, 1998), Environmental Baseline Survey (EBS) (EA, 1997), Remedial Investigation Report (IT, 1994), the Site Inspection (SI) Study (IT, 1989), and the Initial Assessment Study (IAS) (RGH, 1986). These reports and other information used in the remedy selection process are part of the facility's Administrative Record, located in the Environmental Office at NAWCADTRN. A document repository has also been established at the Mercer County Library, 61 Scotch Road, Ewing, NJ to provide a place for public review of NAWCADTRN environmental documents.

This document provides background information on the Site, presents the selected alternative, and reviews the public's response to the Decision Document.

Under the Navy's Installation Restoration (IR) Program, suspected sites of environmental contamination at the Naval Air Warfare Center, Aircraft Division, Trenton (NAWCADTRN) (formerly the Naval Air Propulsion Center (NAPC)), New Jersey were investigated to verify the presence or absence of alleged contamination. Site 1 has been investigated and found to require action to protect human health and the environment.

On the basis of investigative results, and in accordance with the requirements of the Navy Installation Restoration Program, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Superfund Amendments and Reauthorization Act (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and its related laws and regulations, it is the Navy's decision, in consultation with the New Jersey Department of Environmental Protection (NJDEP) and US Environmental Protection Agency (EPA), that excavation of contaminated soil is warranted for Site 1. All soil (above groundwater and bedrock) located between Buildings 40 and 41 that exceeds any NJSCC will be excavated and disposed off-site.

If the NJSCC are not met at a site, New Jersey requires that an institutional control be implemented. Engineering controls may also be required. If the NJSCC are not met for Site 1, a Declaration of Environmental Restriction (DER) will be prepared which provides notice of the contamination remaining at the property, the restrictions that apply, and any other institutional and/or engineering controls required. The DER will accompany the property through any deed transfer.



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7/21/98  
(Date)

## **1.0 INTRODUCTION**

This decision document summarizes the findings and selected alternative to address soil contamination at Site 1 at NAWCADTRN. Figure 1 shows the general location of NAWCADTRN, while Figure 2 shows the location of Site 1 on the installation.

Investigations performed at this site included sampling and analysis of both soil and groundwater for assessing the presence or absence of contamination which could pose a threat to human health or the environment. The results of the sampling are found in the Installation Restoration Program Site 1 Source Sampling Report (EA, 1998), Environmental Baseline Survey (EBS) (EA, 1997), Remedial Investigation Report (IT, 1994), and the Site Inspection (SI) Study (IT, 1989) which are part of the NAWCADTRN Administrative Record and are available for viewing in the document repository located at the Mercer County Library, 61 Scotch Road, Ewing, NJ.

Based on the findings of previous investigations, an action is required for soil at Site 1 to protect human health and the environment. Groundwater at this site is being investigated and will be addressed as a separate site-wide Operable Unit and Decision Document. The soil at the other eight IR Program sites (2, 3, 4, 5, 6, 7, 8, and 9) was or will be addressed in separate Decision Documents.

Constituents in soil at NAWCADTRN are compared to Residential Direct Contact, Non-residential Direct Contact, and Impact to Groundwater New Jersey Soil Clean-up Criteria (NJSCC). The NJSCC are not Applicable or Relevant and Appropriate Requirements (ARARs), but rather criteria to be considered (TBC). If the NJSCC are not met at a site, New Jersey requires that an institutional control be implemented. Engineering controls may also be required. If the NJSCC are not met for Site 1, a Declaration of Environmental Restriction (DER) would be prepared which provides notice of the contamination remaining at the property, the restrictions that apply, and any other institutional and/or engineering controls required. The DER would accompany the property through any deed transfer.

## **2.0 BACKGROUND**

### **2.1 Facility Description**

NAWCADTRN, a former testing facility for military aircraft engine performance, is located on approximately 66 acres in Ewing Township, Mercer County, New Jersey (see Figure 1). The site is five (5) miles northwest of Trenton, NJ, thirty (30) miles northeast of Philadelphia, PA, and two (2) miles north-northeast of the Delaware River.

Trenton-Mercer County Airport borders most of the northern portion of the NAWCADTRN property. A railroad borders the site on the east and separates the NAWCADTRN Administration Building from the remainder of the facility. The southern boundary of the

NAWCADTRN property is Parkway Avenue. Several commercial properties are located across Parkway Avenue. East of the railroad is a manufacturing plant that produces automobile components. East of the manufacturing site is Gold Run Creek and associated ponds.

Residential, agricultural, commercial, and light-industrial areas are located further south and southwest of NAWCADTRN. A large portion of the land between the Delaware River and NAWCADTRN is owned by the State of New Jersey, including the State Police Headquarters and the Marie S. Katzenbach State School for the Deaf.

Three large buildings comprised the NAWCADTRN experimental engine laboratory: The Blower Wing (B-40), the Test Wing (B-41), and the Exhauster Wing (B-42). The Test Wing was composed of ten (10) engine test cells and control rooms that provided experimental atmospheric conditions for engine performance testing. The cells provided high altitude, low altitude, and sea-level simulations. Helicopter transmission testing was also conducted in the Test Wing. The Blower Wing generated simulated atmospheric conditions and the Exhauster Wing received the engine exhaust gas and simulated altitude conditions.

The NAWCADTRN testing complex was fully serviced by an on-site industrial wastewater treatment plant, a high-capacity water cooling tower, a paint shop, a sheet metal shop, a machine shop, a woodworking shop, fuel and lubrication laboratories, a general chemistry laboratory, and various engineering and administrative offices. A 600 foot on-site potable water well was sealed in October 1993; the facility is now served by Trenton Water Works. Industrial wastewater from the site operations was diverted through a central piping system to a 52-foot-deep gravity basin, known as the Barometric Well. The Barometric Well, Site 8, is located between the Test and Exhauster Wings (see Figure 2). Floor drains existed in most NAWCADTRN buildings and shops. The drains led to the Barometric Well which served as a collection and holding area for various types of industrial discharges generated on site. The industrial wastewater from the Barometric Well was diverted to the on-site industrial wastewater treatment plant and then reused as cooling water and discharged to the sanitary sewer. Sanitary wastewater generated at the facility goes directly to the municipal sewer. Stormwater runoff from the facility goes directly to Gold Run. In 1995, a groundwater treatment facility was installed to pump and treat groundwater contamination at the southwest corner of the NAWCADTRN property. In the summer of 1995, a sump pit was installed to eliminate groundwater infiltration into the West-end Drainage Ditch. The groundwater from this sump pit was pumped to the Barometric Well. In early 1998, the Barometric well was decommissioned and the groundwater from the sump pit was pumped directly to the on-site groundwater treatment facility.

As part of the Base Realignment and Closure Act of 1993, the NAWCADTRN was designated for closure in 1998.

## **2.2 Physical Characteristics**

A summary of the physical characteristics of the facility is provided in the following sections. More detailed information is provided in the RI report and other referenced documents which are available for review as part of the Administrative Record.

### **Site Topography**

The NAWCADTRN facility is located within a sub-unit of the Piedmont known as the Northern Triassic Lowland. The topographic relief of this sub-province is characterized by undulating ridges and nearly-level to gentle slopes. The elevation of the topographic surface at the NAWCADTRN site ranges from 176 feet above mean sea level in the northern portion of the property to 132 feet above mean sea level in the southeastern portion, along Parkway Avenue. The NAWCADTRN site is located at latitude 43°13' north and longitude 74°46' west.

### **Site Hydrology**

There are no streams, creeks, or lakes located on the site. Three significant streams are located within the vicinity of the NAWCADTRN site: Gold Run Creek, the western branch of Shabakunk Creek, and Jacobs Creek, all of which drain into the Delaware and Raritan Canal and the Delaware River. The only local stream that receives runoff directly from NAWCADTRN is Gold Run, a shallow north-to-south flowing stream located south of Parkway Avenue and east of NAWCADTRN. An intermittent spring located to the west of the facility forms the ancestral West Branch of Gold Run. The inflow to the culvert is at the intersection of Parkway Ave. and Decou Ave. (Figure 3). The culvert carries flow under Parkway Ave. eastward about 2,800 ft. to an exit culvert located east of the facility. The Hydrogeologic Framework, Water Levels, and Trichloroethylene Contamination Report prepared by the U.S. Geological Survey (November 3, 1997) provides additional information concerning the site hydrology.

### **Site Overburden Geology**

The unconsolidated overburden at and around NAWCADTRN consists of natural alluvial deposits and in-situ weathered rock. Much of the shallow subsurface in residential and industrial areas consists of material that has been mixed by excavation, filling, construction, and other disturbances such that the original shallow stratigraphy has been destroyed. The natural alluvial deposits are a discontinuous Quaternary unit deposited by interglacial meltwater streams. This unit, the Pennsauken Formation, is composed mainly of silt with intermixed clay, sand, and gravel. The alluvium ranges in color from orange-brown to dark brown. These dense meltwater deposits exhibit poor vertical permeability and influence local surface water runoff and infiltration.

The overburden is thickest, approximately 22 feet, on the northwest end of the NAWCADTRN site, near the Cooling Towers (Figure 2) and decreases to six (6) feet in the southern portion of

the site. In some places at Site 1, the buildings, footings, utilities and roadways lie directly on top of the bedrock.

### **2.3 Site 1, Brine Handling Area and West-end Drainage Ditch**

Site 1 is located in the southwest corner of the NAWCADTRN facility (see Figure 2). The site encompasses the area between Buildings 40 and 41 (the Blower Wing and the Test Wing respectively), and the West-end Drainage Ditch (see Figure 3). The Brine Handling Area is rectangular, measuring approximately 150 feet by 300 feet. Four brine pump houses (Buildings 44, 45, 46 and 47) are located in this area. Four types of cooling systems were used in the Blower Wing area: the brine heat exchangers, ethylene glycol coolers, freon coolers, and cooling water towers. The material used as the heat exchange medium or "brine" in the brine handling system was trichloroethene (TCE). The capacity of the brine handling system was approximately 28,000 gallons. The usage rate was reported to be 500 gallons annually. Lesser quantities of TCE (approximately 100 gallons per year) were used as a cleaning solvent. The capacity of the ethylene glycol system was approximately 3,000 gallons and the capacity of the freon cooling system was approximately 107,000 pounds. Annual usage rates for ethylene glycol and freon in this area were 4,000 gallons and 40,000 pounds, respectively.

The heat exchangers and associated TCE piping system at Site 1 were in use from 1955 to 1997. Approximately 500 gallons of TCE and 10,000 gallons of ethylene glycol have been released in this area due to periodic leaks from pipe flanges and fittings. Releases occurred primarily in unpaved areas. Site 1 piping was retrofitted in 1975 and in 1986. Additional quantities of TCE, estimated to have totaled 1,200 gallons, have been released in this area as the result of three spills that occurred between 1978 and 1982.

Prior to 1958, floor drains in Buildings 40, 41, and 42, that were equipped with oil/water separators, discharged to the West-end Drainage Ditch. In or about 1958, the floor drains were connected to the NAWCADTRN Barometric Well, and the oil/water separators were removed. The West-end Drainage Ditch was rectangular and measured approximately 25 feet by 400 feet. The ditch was an open swale until 1970, at which time a corrugated sewer pipe was installed and the ditch was backfilled. The corrugated pipe extends from just northwest of the northwest end of Building 41, southward to an oil/water separator near Parkway Ave (Figure 14). The ditch has served as a major storm drainage route for the facility since 1951, and has received runoff from the brine handling area since 1955. Liquid waste solvents and heat exchange fluids from the various Site 1 systems drained into the West-end Drainage Ditch from 1951 until 1957, when the facility's Industrial Wastewater Treatment Plant was modified to receive and treat those wastes.

Runoff from the Brine Handling Area flows into the West-end Drainage Ditch and then to a 48-inch outfall at the end of the corrugated pipe. Water from the West-end Drainage Ditch flows into the Ewing township storm drainage system through a culvert at Parkway Ave. This portion of the Ewing drainage system empties into Gold Run Creek (southeast of NAWCADTRN), which eventually discharges into the Delaware River.

In addition to the above sources of contamination, a video survey of the sewers that empty into the West-end Drainage Ditch identified several sewers that had collapsed. NAWCADTRN repaired the sewers in the Site 1 area in 1995.

In March 1995, the Navy began operating a groundwater recovery and treatment system at Site 1. The system extracted contaminated groundwater from one recovery well (15BR) at a rate of 15 gallons per minute for treatment via air stripping/catalytic oxidation and discharge to the municipal wastewater treatment facility. In March 1998, the recovery system was upgraded to extract groundwater from four additional wells (20BR, 41BR, 45BR, and 48BR) at a total rate of 60 gallons per minute. The location of all recovery wells connected to the existing groundwater treatment facility is shown on Figure 4.

In the summer of 1995, a sump pit was installed to eliminate groundwater infiltration into the West-end Drainage Ditch. The groundwater from this sump pit was pumped to the Barometric Well. In early 1998, the Barometric well was decommissioned and the groundwater from the sump pit was pumped directly to the on-site groundwater treatment facility.

### **Underground Storage Tank C-13**

A 1,000 gallon underground storage tank (UST) (Tank C-13) was installed west of Building 55 in 1960 (Figure 14). It was likely used to store scrap jet fuel and stoddard solvent (10-15% ethylbenzene). Records indicate that the tank was last used in the early 1970s. At a later date, structure S-85, also known as Pad 55, was built west of the tank. The tank was located between Pad 55 and Building 55.

Holes drilled in the floor of Building 55, in 1990, had a black substance ooze upward. Excavations for footings north of the tank, conducted in 1992, had product seep into them at about 1.5 ft. below grade. The product was assumed to be from the tank and was considered to be a discharge of a hazardous substance that required remediation.

The tank was removed in March 1993. When excavated, the tank had several holes in it and free product was observed on the groundwater.

Monitoring well MW-41S was installed just south of the excavation and MW-40S was located west of Pad 55. These wells were located to determine if product had migrated downgradient of the tank location. No product was encountered during the installation of these wells. Initial sampling of groundwater from these wells indicated levels of benzene in both wells and xylenes in well MW-40S above cleanup standards. Elevated levels of chlorinated VOCs (trichloroethene (TCE), 1,2-dichloroethene (1,2-DCE) and vinyl chloride) were also detected.

In June 1997, the soil at SB-39 was excavated and removed as part of the West Ditch storm sewer pipe replacement. During excavation soil was removed, from the area west of Pad 55, that



was visibly contaminated with petroleum hydrocarbons. Soil samples taken from the area west of Pad 55 opposite the area where the leaking UST (C-13) was removed, indicated elevated TPH levels of 15,000 ppm and 43,000 ppm. The soil encountered in the West Ditch that exceeded soil cleanup criteria was excavated for proper off base disposal.

Additional groundwater monitoring was conducted in January through March 1998 to assess the impacts of this tank on groundwater. The results of this additional sampling are included in the Groundwater Monitoring Report for Underground Storage Tank Removal Sites (24 June 1998).

### **3.0 ENVIRONMENTAL INVESTIGATION SUMMARY**

In this section, the data collected and analyzed during the IAS, SI, RI, EBS, and Source Sampling efforts is reviewed and summarized for Site 1. The reader is referred to the Installation Restoration Program Site 1 Source Sampling Report (EA, 1998), Environmental Baseline Survey (EBS) Phase II Supplemental Findings Report (EA, 1998), Environmental Baseline Survey (EBS) Phase II Report for Parcel B (EA, 1997), Remedial Investigation (RI) Report (IT, 1994), the Site Inspection (SI) Study (IT, 1989), and the Initial Assessment Study (IAS) (RGH, 1986) for a full description of the data summarized here.

The sampling results are compared to the NJ Soil Cleanup Criteria (NJSCC) which are risk-based contaminant specific cleanup levels. The NJSCC are not Applicable or Relevant and Appropriate Requirements, but rather criteria to be considered (TBC). Although the NJSCC are not promulgated standards, they were developed in accordance with New Jersey statutes which promulgate a minimum soil remediation criteria resulting in an additional cancer risk of one in one million for carcinogens and for non-carcinogens limiting the Hazard Index for any given effect to a value not exceeding one.

Soil results were compared to all three types of NJSCC: Residential Direct Contact, Non-Residential Direct Contact and Impact to Groundwater. The NJSCC are used for guidance purposes only; other site-specific factors, including but not limited to, environmental impacts and background conditions must also be considered in establishing clean-up criteria. The soil cleanup criterion for beryllium for the NAWCADTRN site is the maximum beryllium value detected in background soil borings (5.6 mg/kg).

#### **3.1 Overview**

The first environmental investigation at NAWCADTRN was an Initial Assessment Study (IAS) conducted by Rogers, Golden and Halpern (RGH) to identify any areas of potential environmental concern at the site. Results of the study were submitted to the Naval Energy and Environmental Support Activity (NEESA) in May 1986 (RGH, 1986). The IAS study was limited to an environmental reconnaissance project, which did not involve any environmental

sampling. However, the study identified seven areas of potential concern which were recommended for further investigation.

A subsequent environmental investigation, the Site Inspection (SI) study, was conducted at NAWCADTRN from October 1988 to April 1989 by IT Corporation (IT, 1989a). The objective of the SI was to confirm the presence or absence of contamination in soils and groundwater at the seven sites identified in the IAS and at two additional sites identified by the Navy and New Jersey Department of Environmental Protection (NJDEP). Eight of the nine sites investigated during the SI were recommended for further study and contaminant delineation. The only site recommended for no action after the SI was Site 2, the fire fighting area. Sites 3, 6, and 9 were proposed for further contaminant delineation in both soil and groundwater. Sites 1, 4, 5, and 8 were recommended for additional groundwater investigation only. Soil sampling and underground storage tank removal were proposed for Site 7.

A Remedial Investigation (RI) was performed for NAWCADTRN in two phases by IT Corporation from April 1992 through December 1993. The RI was conducted to determine the nature and extent of contaminants identified during previous investigations and determine if remediation was necessary. The RI Report was completed in 1994 and distributed in November 1994.

NAWCADTRN is scheduled for closure in December 1998 under the Base Realignment and Closure Act (BRAC) of 1993. An Environmental Baseline Survey (EBS) was conducted to support the Navy's compliance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Section 120 as amended by Public Law 102-46, the Community Environmental Response Facilitation Act (CERFA), and state and local real property transfer disclosure notification regulations. The survey was conducted in two phases. Phase I was conducted from October to December 1993 and Phase II was performed in April and May 1995. A total of 74 areas of concern (AOCs) were identified during the EBS. The AOCs were evaluated to decide which areas required additional investigation sampling. An EBS Phase II Investigation of the sites was conducted from August 1996 to March 1997. Based on the results of this investigation, additional sampling activities were recommended for several AOCs. An EBS Phase II Supplemental Investigation was conducted from October to December 1997. The results of the EBS investigations can be found in the Environmental Baseline Survey (EBS) Phase II Report (EA, 1997) and the Environmental Baseline Survey (EBS) Phase II Supplemental Findings Report (EA, 1998).

### **3.2 Site 1 Summary, Brine Handling Area and West-end Drainage Ditch**

#### **Site Inspection and Remedial Investigation Results**

During the SI, fourteen borings and hand auger locations (SB-1[4-6'], SB-2[4-5'], SB-3[4-5.5'], SB-4[8-10'], SB-5[4-6'], MW-2S[0-2'], MW-3S[4-5.5'], MW-5S[6-8'], HA-1[1.5-2'], HA-2[1.5-2'], HA-3[1.5-2'], HA-4[1.5-2'], HA-5[1.5-2'], and HA-6[1.5-2']) were analyzed for volatile

organic compounds (VOCs) and ethylene glycol. Sample MW-5S[6-8'] was also analyzed for semi-volatile organic compounds (SVOCs). During the RI, eighteen soil samples were collected from ten soil borings (MW-5BR[2-4',4-6'], MW-6BR[0-2',6-8'], MW-7BR[0-3'], MW-15BR[0-2'], MW-20BR[0-2',2-4'], MW-22BR[0-2',2-4'], MW-32S[5-7', 15-17'], SB38-A[0-2'], SB38-B[2-4'], SB39-A[4-6'], SB39-B[6-8'], SB40-A[2-4'], and SB40-B[4-6']) (see Figure 3). These samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and inorganics. Sample MW-7BR[0-3'] was also analyzed for ethylene glycol.

VOC results for the fourteen soil samples collected during the SI were significantly below all NJSCC. VOC results of soil samples collected during the RI were non-detectable or well below all NJSCC.

During the SI, the SVOC bis(2-ethyl hexyl)phthalate was detected in one sample (MW-5S) at a level (0.44 mg/kg) well below all NJSCC. RI sample MW-20BR[0-2'] contained benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and dibenz(a,h)anthracene above the residential and non-residential NJSCC. This sample also contained indeno(1,2,3-cd)pyrene above the residential NJSCC. Both samples at the MW-22BR location contained benzo(a)pyrene above the residential and non-residential NJSCC and benzo(a)anthracene and benzo(b)fluoranthene above the residential NJSCC. Sample MW-22BR[2-4'] also contained benzo(k)fluoranthene above the residential NJSCC. Sample MW-32S[5-7'] contained benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and dibenz(a,h)anthracene above the residential and non-residential NJSCC. This sampling location also contained chrysene above the residential NJSCC. The soil at MW-20BR, MW-22BR and MW-32S locations was excavated (to a depth of 4 ft.) and removed for proper disposal during the installation of vaults for recovery-wells. Table 1-1 provides a summary of the SVOC results for Site 1 that exceeded residential and non-residential NJSCC. Impact to groundwater NJSCC were not exceeded in the SI or RI samples.

During the RI inorganic sampling, arsenic was detected above the residential and non-residential NJSCC in four samples (MW-32S(5-7'), SB-38B(2-4'), SB-40A(2-4'), SB-40B(4-6')). Thallium exceeded the residential and non-residential NJSCC in two samples (SB-39A(4-6'), SB-39B(6-8')). Beryllium was detected above the soil cleanup criteria in three samples (SB-39A(4-6'), SB-39B(6-8'), SB-40B(4-6')), however, the samples were duplicate analysis not within control limits. Antimony exceeded the residential NJSCC in fourteen samples collected during the RI but did not exceed the non-residential NJSCC for this compound in any sample. Barium exceeded the residential NJSCC in one sample (MW-5BR(2-4')). Table 1-2 provides a summary of inorganic results for Site 1 that exceeded any NJSCC.

The soil at SB-39 was excavated and removed as part of the West Ditch storm sewer pipe replacement conducted in June 1997.

Samples from the SI and RI that were analyzed for ethylene glycol indicated no detection of this compound.

### **Environmental Baseline Investigation (EBS) and Site 1 Source Sampling Results**

Areas of Concern (AOC) Nos. 4, 20, 20a, and 20h were originally identified at Site 1 and investigated as part of the EBS Phase II Investigation conducted from August 1996 to March 1997. Additional investigation of AOC 20h was conducted as part of the EBS Phase II Supplemental Investigation conducted from October to December 1997. AOC 71 was also investigated as part of the Supplemental Investigation. The AOC locations are identified on Figure 5.

#### **Area of Concern No. 4**

Area of Concern No. 4 (Figure 5) includes Building 55, the fuel control testing laboratory control facility. Two above ground storage tanks used for fuel storage and one underground storage tank (UST) used for waste glycol storage, were previously located north of the building (Figure 14). The 1000 gallon waste glycol UST (E-11) was abandoned in place. This tank and surrounding soil will be removed as part of the remedial action for Site 1. A second UST (Tank C-13), located west of Building 55 was removed in March 1993 in accordance with New Jersey rules and regulations. Sampling of this area was conducted to evaluate the potential impact to the soil resulting from the former UST (C-13) located west of the building.

From 12 - 19 December 1996, during the EBS Phase II Investigation, thirteen soil samples (4-BH1 (1-2', 2-2.5'), 4-BH2 (1-1.5'), 4-BH3 (1-2'), 4-BH5 (1.5-3'), 4-BH6 (4-6', 6-7.5'), 4-BH7 (5-6', 6-7'), 4-BH8 (1.5-2', 3-3.5') and 4-BH9 (0-2', 2-2.5')) were collected from eight borings located at AOC 4, in the vicinity of the Site 1 West-end Drainage Ditch. The samples were analyzed for VOCs and total petroleum hydrocarbons (TPH) (samples from borings 4-BH8 and 4-BH9 were analyzed for VOCs only). The sampling locations and results that exceeded NJSCC are shown on Figure 6.

The concentration of trichloroethene (1500 ug/kg) in sample 4-BH8 (3-3.5') exceeded the impact to groundwater NJSCC, but did not exceed the residential and non-residential NJSCC. Acetone, benzene, naphthalene, and toluene were detected at concentrations greater than reporting limits but less than NJSCC.

TPHs were detected in samples 4-BH1 (1-2', 2-2.5'), 4-BH2 (1-1.5'), 4-BH3 (1-2') and 4-BH7 (5-6', 6-7'), but results were below all NJSCC.

#### **Area of Concern No. 20**

Area of Concern No. 20 (Figure 5) includes the "B" rig housing floors and surrounding areas. The "B" rig was a glycol heat exchanger. Past practice was to allow oil to spill onto the concrete floor when cleaning the units. Past releases of significant amounts of oil were reported by

Activity personnel. Sampling of this area was conducted to evaluate the nature and extent of potential contamination outside the "B" rig housing.

On 9 December 1996, during the EBS Phase II Investigation, eight soil samples (20-BH1 (1-1.5', 1.5-3'), 20-BH2 (0-1.5', 1.5-3.5'), (20-BH3 (1-1.5', 1.5-3'), 20-BH4 (0-1.5', 1.5-3')) were collected from four borings located at AOC 20, located in the vicinity of Site 1. The samples were analyzed for lead, total petroleum hydrocarbons (TPH), and petroleum aromatic hydrocarbons (PAH). The sampling locations and results that exceeded any NJSCC are shown on Figure 7.

Seven PAHs were detected at concentrations exceeding non-residential, residential and/or impact to groundwater NJSCC (benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benz(a)anthracene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene). The highest concentrations were reported from the surface samples collected from each boring.

TPHs were detected at concentrations ranging from 95 mg/kg in sample 20-BH2 (1.5-3.5') to 1,700 mg/kg in sample 20-BH1 (0-1.5'), but all levels were below any NJSCC. Lead was detected at concentrations ranging from 6.4 mg/kg in sample 20-BH4 (1.5-3') to 126 mg/kg in sample 20-BH2 (0-1.5'), which are below all NJSCC for lead.

#### **Area of Concern 20a**

Area of Concern 20a (Figure 5) includes the soil adjacent to Building 40 and the northwest corner of the roof. During the 1995 Phase II Basewide EBS assessment, staining was observed on gravel located at the northwestern exterior corner of Building 40. Sampling was conducted to evaluate the nature of potential contamination in the area.

On 9 December 1996, during the EBS Phase II Investigation, three soil samples (20a-BH1 (0-1.5', 1.5-2'), 20a-BH2 (0-1.5')) were collected from two borings located at AOC 20a, located in the vicinity of Site 1. The samples were analyzed for VOCs, total petroleum hydrocarbons (TPH), and petroleum aromatic hydrocarbons (PAH). No results exceeded any NJSCC for soil samples at AOC 20a. The sampling locations are shown on Figure 8.

#### **Area of Concern No. 20h**

Area of Concern No. 20h (Figure 5) includes the brine houses (Bldgs. 44, 45, 46, and 47). The brine houses contained pumps for TCE and ethylene glycol. They are located south of Building 41, within the area designated as Site 1. Staining was observed on the southern side of the brine houses and around the roofs. Releases of TCE and ethylene glycol have been reported to have occurred in the brine houses. Sampling was conducted outside the brine houses in areas of staining to evaluate the nature and extent of potential contamination.

On 11 December 1996, during the EBS Phase II Investigation, one soil boring was advanced on the south side of each brine house. Seven soil samples (20h-BH1 (0-2'), 20h-BH2 (0-2', 2-4'), (20h-BH3 (0-2', 2-4'), 20h-BH4 (0-2', 2-3')) were collected from four borings located at AOC

20h. The samples were analyzed for VOCs, total petroleum hydrocarbons (TPH), and petroleum aromatic hydrocarbons (PAH). The sampling locations are shown on Figure 9.

There were no VOCs, SVOCs or TPHs detected in soil from AOC 20h that exceeded any NJSCC. However, additional information indicated the possibility that PCB-containing hydraulic fluid was used in the past at control valves located above the stained soil areas south of the four brine houses. Additional soil sampling was recommended at AOC 20h to evaluate the presence or absence of PCBs in the soil.

On 30 October 1997, during the EBS Phase II Supplemental Investigation, five soil borings were advanced on the south side of the brine houses. Ten soil samples (20h-BH5 (0-0.5', 1-1.5'), 20h-BH6 (0-0.5', 3-3.5'), 20h-BH7 (0-0.5', 0.5-1'), 20-BH8 (0-0.5', 4-4.5'), 20-BH9 (0-0.5', 0.5-1')) were collected from four borings located at AOC 20h. The samples were analyzed for PCBs. The sampling locations and results that exceeded any NJSCC are shown on Figure 9.

Aroclor 1248 was detected in samples 20h-BH8 (0-0.5', 4-4.5') at levels above the residential and non-residential NJSCC for total PCBs. Aroclor 1260 was detected in samples 20h-BH7 (0-0.5', 0.5-1') at levels above the residential NJSCC. No PCBs were detected in samples taken from 20h-BH5, 20-BH6, and 20-BH9.

#### **Area of Concern No. 71**

Area of Concern No. 71 (Figure 5) includes an area of excavation, conducted in June 1997, to remove a storm sewer pipe west of structure S-85 (Pad 55) in the West Ditch Area. Stained soil from this excavation was sampled for TPH, and sample results indicated that petroleum hydrocarbons impacted this area (TPH concentrations exceeded the NJDEP soil criterion of 10,000 ug/kg). The highest concentrations were reported from a portion of the excavation west of Building 55 and UST C-13. Soil from this part of the excavation was removed for proper off-base disposal and replaced with clean fill. Sampling was conducted for this AOC to evaluate the nature and extent of impacted soil in the vicinity of the excavation.

On 4 and 5 November 1997 twelve soil samples (71-BH1 (2-2.5', 5-5.5'), 71-BH2 (2.5-3', 3.5-4'), 71-BH3 (2-2.5', 2.5-3'), 71-BH4 (1-1.5', 1.5-2'), 71-BH5 (1.5-2', 4-4.5'), 71-BH6 (0.5-1', 3.5-4')) were collected from six borings installed east of the former excavation and adjacent to the concrete pad (Structure S-85) and immediately west of the former excavation. The samples were analyzed for VOCs and TPH. The sampling locations are shown on Figure 10.

Trichloroethene was detected in sample 71-BH1 (5-5.5') at an estimated concentration of 380 ug/kg, below all NJSCC. No other VOCs were detected. TPH was detected in four of the twelve samples at concentrations ranging from 37 ug/kg to 100 ug/kg, below the NJDEP soil criterion of 10,000 ug/kg for TPH.

The results of soil sampling conducted for AOCs 4 and 71 indicate that soil in the vicinity of the West Ditch and former UST C-13 location does not contain levels of VOCs or TPH above any NJSCC.

## **EBS Phase II Investigation**

During the EBS Phase II Investigation, the Navy performed direct-push soil vapor assessment (SVA) surveys at a number of EBS areas of concern (AOC) to select soil sampling locations. Soil vapor samples were analyzed using a field gas chromatograph for selected volatile organic compounds (VOCs), including benzene, toluene, ethylbenzene, and total xylenes (BTEX), cis- and trans-1,2-dichloroethene (1,2-DCE), 1,1,1-trichloroethane (1,1,1-TCA), trichloroethene (TCE), and tetrachloroethene (PCE). An overall SVA survey was performed over the areas between Buildings 40 and 41 (designated as IR Program Site 1) to address concerns of residual TCE in the soil. A total of 81 SVA sample points were installed at Site 1 between 25-27 September and between 8-10 October 1996. SVA sample results at Site 1 indicated elevated concentrations of VOCs in 16 samples. At three of these locations, BTEX compounds were the primary constituents detected in the soil vapor. At the remaining 13 locations, TCE and/or 1,2-DCE were the primary constituents detected. The results of this survey were reported in the EBS Phase II Report for Parcel B (EA, 1997). The EBS Phase II soil vapor sampling locations and results are shown on Figure 11. Further investigation/action was recommended to address the residual chlorinated VOC concentrations identified during the EBS Phase II SVA survey.

Since groundwater beneath Site 1 was known to be impacted by VOCs, further work was needed to evaluate the source (soil or groundwater) of VOCs in soil vapor and assess whether soil at Site 1 contains VOCs above any NJSCC. In February and March 1998, a passive soil vapor survey, followed by confirmatory soil sampling was performed to: 1) reassess soil vapor VOC concentrations detected during the initial SVA survey, 2) assess soil vapor VOC concentrations in the vicinity of monitoring wells where historic groundwater analytical results indicate elevated concentrations of VOCs, 3) verify SVA data with soil sampling, and 4) assess the source (soil or groundwater) of VOCs in soil vapor at Site 1.

A total of 43 passive soil vapor samples were collected within Site 1. Thirteen of the samples were from locations where previous SVA results indicated elevated concentrations of TCE and 1,2-DCE in the soil vapor. An additional 32 samples were collected from the West Ditch Area and in the vicinity of monitoring wells in which historical groundwater results indicate that TCE and its degradation products 1,2-DCE and vinyl chloride are present. Soil vapor samples were collected from 2-3 ft. below the ground surface and analyzed for VOCs. Passive soil vapor sample results indicated elevated concentrations of VOCs in 22 samples. Trichloroethene was detected in 18 of these samples and 1,2-DCE was detected in 4 of the 22 samples. At seven of these locations, BTEX compounds were detected in the soil vapor. The results of this survey were reported in the Installation Restoration Program Site 1 Source Sampling Report (EA, 1998). The passive soil vapor sampling locations and results are shown on Figure 12. In general, the highest VOC concentrations were detected in soil vapor samples collected between Buildings 40 and 41. In the West Ditch Area, VOCs were detected in only one soil vapor sample (PSV-7).

The results of this soil vapor sampling event and the results of the initial SVA survey conducted during the EBS Phase II Investigation were evaluated to select soil sampling locations. In

general the soil vapor sample locations that exhibited elevated concentrations of TCE and/or 1,2-DCE were targeted for soil sampling. A total of 28 soil borings were installed at Site 1 during the Source Sampling Investigation to evaluate potential areas of VOC impacted soil. Table 2-1 presents a list of the installed soil borings, completion depth, sample interval, and rationale for boring installation. Samples were collected continuously and every 2 ft. Interval was screened with a photo-ionization detector (PID). One sample from each boring was selected for laboratory analysis based on the PID screening results. The samples were analyzed for VOCs and TPH. The soil sampling locations and results above any NJSCC are shown on Figure 13.

At Site 1, TCE was detected at or above the impact to groundwater NJSCC of 1000 ug/kg in 9 samples. The concentration of TCE in sample PSV-SB-28 (3.5-4') also exceeded the residential NJSCC of 23,000 ug/kg. The concentration of TCE in samples PSV-SB-18 (0.5-1') and PSV-SB-33 (4-4.5') also exceeded the non-residential and residential NJSCC of 54,000 ug/kg. 1,2-DCE was detected at or above the impact to groundwater NJSCC of 1000 ug/kg in 7 samples. The concentration of 1,2 DCE in sample PSV-SB-18 (0.5-1') also exceeded the residential NJSCC of 79,000 ug/kg. No other VOCs exceeded any NJSCC. Table 1-3 provides a summary of the VOC results that exceeded any NJSCC.

#### **4.0 DECLARATION OF FINDINGS AND DECISIONS**

The investigation of Site 1 has concluded that the soil located at this site exceeds residential, non-residential and impact to groundwater NJSCC and may be acting as a source of groundwater contamination. Based on these findings, the Navy has concluded that excavation of contaminated soil is required at this Site. The soil located between Buildings 40 and 41, where impact to groundwater NJSCC is exceeded, will be excavated to remove the potential source of groundwater contamination. Figure 15 indicates the proposed extent of soil to be excavated. The actual area to be excavated will be based on post-excavation samples to be taken at 50 ft. intervals along the edge of the excavation. The depth of excavation will be to bedrock or the groundwater table (approximately 4 ft.), whichever is encountered first. The soil volume to be removed is approximately 10,000 cubic yards. Following excavation, samples will be collected to confirm that the impacted soil has been removed.

The removal of soil at Site 1 involves a three phase project as follows:

- Removal of all asbestos containing material between Buildings 40 and 41
- Demolition and removal of all piping, equipment and structures between Buildings 40 and 41
- Removal of all contaminated soil between Buildings 40 and 41 (to bedrock or the groundwater table, whichever is encountered first)

The wastes that will be generated during this project and how each will be handled for disposal is provided as follows:



- Asbestos containing material (ACM): This waste includes tank and piping insulation as well as surficial soil impacted by fallen ACM insulation. ACM disposal will be handled by a NJ licensed asbestos removal subcontractor. The waste will be double bagged on-site and placed into a lined DOT specification rolloff container or drums and will be disposed off-site at a permitted asbestos disposal facility.
- Residual TCE and glycol drained from transfer pipes and storage tanks: These liquids will be drained and containerized on-site in 55-gallon drums. They will be disposed off-site following waste classification analysis.
- Demolition debris: The debris will be staged in 30 to 40 cubic yard roll-off containers as it is generated. The containers will be staged on-site in the assigned staging area. Testing of materials in the area has indicated that all painted materials have lead based paint. The debris will be segregated into non-painted equipment, parts, and piping and lead-based paint covered equipment, parts, and piping. The debris will be salvaged or recycled.
- TCE and benzo(a)pyrene contaminated soil: This soil will be sampled in-situ and analyzed for waste classification purposes and then direct loaded onto trucks for proper off-site disposal.
- Water generated from dewatering activities: This water will be pumped into a holding tank for sediment settling prior to being pumped into the existing groundwater treatment system and discharge to the local publicly owned treatment facility.

This project will be conducted in accordance with the following regulations and criteria:

- NJDEP Soil Cleanup Criteria
- NJ Asbestos Contractor Licensing and Abatement Regulations
- NJDEP Solid and Hazardous Waste Regulations
- NJ NPDES/POTW Pretreatment Regulations
- NJDEP Air Pollution Control Regulations for Fugitive Dust Emissions
- EPA NESHAPS for Asbestos Abatement Activities.

The work is scheduled to be conducted from May 26th to August 30th. During this time work will be conducted five (possibly six if required) ten hour days per week until the project is completed. A fence will be constructed around the work area. A staging area will be set-up within the fence on the west parking lot to load scrap equipment and debris into trucks for disposal. Soil will be loaded directly into trucks and transported directly off-site.

The impacts to the community from this action are expected to be minimal. The main impacts to the community from this action will be increased truck traffic and truck noise. It is anticipated that up to 35 trucks per day will enter and leave the facility. Trucks will use Bear Tavern Road or Scotch Road to travel between the facility and I-95. The trucks leaving the facility will be

decontaminated and covered to eliminate dust or debris. On-site demolition work is being conducted between buildings and noise from the facility is expected to be minimal.

The soil which exceeded non-residential NJSCC at locations SB-38, SB-39, and SB-40 is at depth (2' to 8' below the ground surface) and would not be contacted unless digging is conducted. The elevated levels of metals at these locations are not impacting groundwater, since metals in groundwater do not exceed New Jersey groundwater quality standards. Therefore, since the soil at some of these locations has been removed, there is no impact to area groundwater, and there is no possibility of contact without excavation, institutional control in the form of a Declaration of Environmental Restriction will be implemented for metals at these locations. The Declaration of Environmental Restriction (DER) would be prepared to provide notice of the contamination remaining at the property, the restrictions that apply, and any other institutional and/or engineering controls required. The DER would accompany the property through any deed transfer.

The NJSCC are not Applicable or Relevant and Appropriate Requirements (ARARs), but rather criteria to be considered (TBC). Although the NJSCC are not promulgated standards, they were developed in accordance with New Jersey statutes which promulgate a minimum soil remediation criteria resulting in an additional cancer risk of one in one million for carcinogens and limiting the Hazard Index for any given effect to a value not exceeding one for non-carcinogens.

If the NJSCC are not met at a site, New Jersey requires that an institutional control be implemented. Engineering controls may also be required. If the remedial action conducted for Site 1 does not meet all NJSCC, a Declaration of Environmental Restriction (DER) which provides notice of the contamination remaining at the property, the restrictions that apply, and any other institutional and/or engineering controls required will be prepared. The DER will accompany the property through any deed transfer.

In making this decision, the Navy's opinion is that the selected remedy complies procedurally and substantively with New Jersey rules and regulations and all applicable or relevant and appropriate requirements of the Installation Restoration Program, CERCLA Section 120, the NCP, and associated laws, guidelines, rules, regulations, and criteria.

## **5.0 COMMUNITY INVOLVEMENT**

The Community Relations Plan (CRP) for NAWCADTRN (September 1995) establishes procedures to guide the flow of information from the Navy to federal, state, and local government officials, interested groups, and residents relative to environmental investigation and clean-up activities at NAWCADTRN. The CRP is intended to keep local government officials and residents informed of environmental activities conducted at the facility and provide opportunities for involvement in the investigation and clean-up process. The CRP as well as all

other documents used to prepare this document are contained in the facility's Administrative Record, located in the Environmental Office at NAWCADTRN. A document repository has also been established at the Mercer County Library, 61 Scotch Road, Ewing, NJ to provide a place for public review of NAWCADTRN environmental documents.

A public notice indicating that the Decision Document for Site 1 is available for public review in the document repository at the Mercer County Library was placed in the Trentonian and the Trenton Times on 14 June 1998. The announcement also identified the time and location of the public meeting and specified a public comment period and the address to which public comments could be sent. Public comments for the Site 1 decision were accepted from 20 June 1998 to 20 July 1998. During this time comments relative to the Site 1 decision could be sent to the Base Environmental Coordinator: Ken Smith, PO Box 7176, Ewing, NJ 08628-0176. The following Responsiveness Summary addresses comments that were received.

A public meeting to present the decision for Site 1 was held on 24 June 1998 at 8:00 a.m. at the Ewing Township Municipal Building, 2 Municipal Drive, Ewing, NJ. At this meeting representatives from the Navy, USEPA, and NJDEP were available to answer questions concerning Site 1 soil.

## **6.0 RESPONSIVENESS SUMMARY**

The purpose of this section is to review public response to the Draft Decision Document for Site 1 soil. It also documents the Navy's answers to any verbal or written comments raised during the public meeting or public comment period.

### Written Comments

During the public comment period from 20 June through 20 July 1998 no written comments were received from the public pertaining to Site 1 soil.

On June 24, 1998 the NJDEP submitted additional written comments to the Draft Decision Document for Site 1 soil. All comments have been incorporated into this final Decision Document for Site 1 soil. A copy of this final Decision Document, has been placed in the document repository for NAWCADTRN located at the Mercer County Library, 61 Scotch Road, Ewing, NJ.

### Public Meeting Comments

During the Public Meeting, several questions were asked. The questions and answers are summarized as follows:

Question 1: When will the truck traffic associated with the remedial action at Site 1 begin?

Answer: The demolition required prior to soil excavation began on May 26, 1998. For the first few months the material going out will be scrap metal and demolition debris. The main truck traffic will be during the soil excavation, which is expected to start in August.

Question 2: Has it been confirmed that the excavated soil is contaminated and not suitable for any other backfill purpose?

Answer: The initial assumption is that the soil to be excavated is hazardous waste. The soil will be sampled prior to excavation and disposed of accordingly.

Question 3: When the asbestos is removed is any of the asbestos dust likely to become airborne and drift from the site?

Answer: No. Part of the procedure when they remove the asbestos is to wet it down. This keeps any asbestos from becoming airborne.

Question 4: Did the asbestos removal contractor apply for a variance to be able to wet the asbestos prior to removal.

Answer: No. The asbestos at this site is considered to be non-friable. Which means that the asbestos will not easily become airborne.

Question 5: Is a private contractor doing the asbestos removal?

Answer: Foster Wheeler Environmental Corporation is conducting the asbestos removal at Site 1. Foster Wheeler has performed many other remediation projects at NAWCADTRN over the past few years.

Question 6: The asbestos removal contractor is aware of all applicable regulations and requirements?

Answer: Foster Wheeler has prepared a Workplan which indicates the applicable regulations and requirements for asbestos removal. NJ Asbestos Contractor Licensing and Abatement Regulations, NJDEP Solid and Hazardous Waste Regulations, NJDEP Air Pollution Control Regulations for Fugitive Dust Emissions, and EPA NESHAPS for Asbestos Abatement Activities will be complied with during this remedial action. A third party contractor (G&C) has also been hired by the Navy to monitor how the work is being done, ensure that the work is being done in accordance with applicable regulations and requirements, and monitor the air quality at the site. Foster Wheeler has also prepared a health and safety plan which addresses the health and safety practices that will be employed by all site workers.

## 7.0 REFERENCES

EA Engineering, Science, and Technology, Inc., April 1998, Installation Restoration Program Site 1 Source Sampling Report for Naval Air Warfare Center, Aircraft Division, Trenton, NJ.

EA Engineering, Science, and Technology, Inc., January 1998, Draft Environmental Baseline Survey (EBS) Phase II Supplemental Findings Report, Naval Air Warfare Center, Aircraft Division, Trenton, NJ.

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IT Corporation, November 1989, Final Site Inspection Report: Naval Air Propulsion Center, Navy Assessment and Control of Installation Pollutants Program, 3 vols., Naval Air Propulsion Center, Trenton, NJ.

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Naval Air Warfare Center, Aircraft Division, Trenton, June, 26 1997, Letter to NJDEP, 36" Storm Water Pipe Replacement.

Naval Air Warfare Center, Aircraft Division, Trenton, June, 15 1994, Remedial Investigation Addendum Report for Underground Storage Tank Investigations.

New Jersey Department of Environmental Protection, February 8, 1994, Revised Soil Clean-up Criteria.

Rogers, Golden and Halpern, 1986, Initial Assessment Study/Preliminary Assessment, Naval Air Propulsion Center, Trenton, NJ.

U.S. Geological Survey, November 3, 1997, Hydrogeologic Framework, Water Levels, and Trichloroethylene Contamination, Naval Air Warfare Center, West Trenton, NJ.

## 8.0 ACRONYMS

AOC - Area of Concern  
ARARs - Applicable or Relevant and Appropriate Requirements  
BRAC - Base Realignment and Closure Act  
BTEX - benzene, toluene, ethylbenzene, xylenes  
CERCLA - Comprehensive Environmental Response, Compensation and Liability Act  
CERFA - Community Environmental Response Facilitation Act  
DCE - Dichloroethene  
DER - Declaration of Environmental Restriction  
EBS - Environmental Baseline Survey  
EPA - U.S. Environmental Protection Agency  
IAS - Initial Assessment Study  
IR - Installation Restoration  
NAPC - Naval Air Propulsion Center  
NAWCADTRN - Naval Air Warfare Center, Aircraft Division, Trenton  
NCP - 40 CFR 300, National Oil and Hazardous Substances Contingency Plan  
NEESA - Naval Energy and Environmental Support Activity  
NJDEP - New Jersey Department of Environmental Protection  
NJSCC - New Jersey Soil Clean-up Criteria  
PAH - Petroleum Aromatic Hydrocarbons  
PCBs - Polychlorinated Biphenyls  
PCE - Tetrachloroethene  
PID - Photo-Ionization Detector  
POA - Plan of Action  
RI - Remedial Investigation  
SARA - Superfund Amendments and Reauthorization Act  
SI - Site Investigation Study  
SVOC - Semi-Volatile Organic Compound  
TBC - To Be Considered  
TCE - Trichloroethene  
TIC - Tentatively Identified Compound  
TPH - Total Petroleum Hydrocarbons  
VOC - Volatile Organic Compound

**Table 1-1 - Site 1**  
**RI Semi-Volatile (SVOC) Soil Sampling Results That Exceeded NJSCC**

Sample ID	benzo(a) anthracene (ug/kg)	benzo(a) pyrene (ug/kg)	benzo(b) fluoranthene (ug/kg)	benzo(k) fluoranthene (ug/kg)	dibenz(a,h) anthracene (ug/kg)	chrysene (ug/kg)	indeno(1,2,3) pyrene (ug/kg)
MW-20BR(0-2')	5,200	5,500	6,500	4,300	1,700	5,300	1,900
MW-22BR(0-2')	2,000	1,700	1,600	370	400	2,600	580
MW-22BR(2-4')	2,500	1,900	1,600	960	370	3,600	640
MW-32S(5-7')	18,000 D	11,000 D	13,000 D	8,700 D	2,600 D	20,000 D	4,400 D
NJDEP Residential Soil Cleanup Criteria	900	660	900	900	660	9,000	900
NJDEP Non- Residential Soil Cleanup Criteria	4,000	660	4,000	4,000	660	40,000	4,000
NJDEP Impact to Groundwater Criteria	500,000	100,000	50,000	500,000	100,000	500,000	500,000

D - Compound identified at a secondary dilution factor

**Table 1-2 - Site 1**  
**RI Inorganic Soil Sampling Results That Exceeded NJSCC**

Sample ID	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Thallium (mg/kg)
MW-5BR(2-4')	107 N	5.4	933	2.3	1 B
MW-5BR(4-6')	71.1 N	3.9	292	3	0.84 B
MW-6BR(0-2')	22.9 N	3.5	95.7	1.3	0.28 B
MW-6BR(6-8')	50.1 N	0.79 B	31.5 B	0.96 B	0.34 B
MW-7BR(0-3')	18	10.3 N	191	2.2	0.34 B
MW-15BR(0-2')	42.2	12.8 N	308	1.8	0.27 B
MW-20BR(0-2')	22.2 N	3.1	62.9	0.63 B	0.22 U
MW-22BR(0-2')	36.3 N	6.7	207	1.6	0.24 U
MW-32S(5-7')	24.4	24.9 *	223 N*	2.4 *	0.52 BW
SB-38B(2-4')	22.2	21.6 *	187 N*	2 *	0.98 B
SB-39A(4-6')	41.1	13.2 *	271 N*	5.9 *	2.1 B
SB-39B(6-8')	45.1	10.3 *	283 N*	7 *	2.2 B
SB-40A(2-4')	21.3	25.6 *	205 N*	4 *	0.86 B
SB-40B(4-6')	99.8	25.5 *	385 N*	11.1 *	1.8 B
NAWCADTRN background <sup>1</sup>	24.2	21.1	563	5.6	1.04
NJDEP Residential Soil Cleanup Criteria	14	20	700	5.6	2
NJDEP Non-Residential Soil Cleanup Criteria	340	20	47,000	5.6	2
Secondary Compliance Criteria <sup>2</sup>					highest level 2.2 > (2x10)

N - spiked sample recovery not within control limits

B - reported value was obtained from a reading that was less than Contract Required Detection Limit but greater than or equal to the Instrument detection Limit

\* - duplicate analysis not within control limits

U - analyte was analyzed for but not detected

W - post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance

1. The soil cleanup criterion for beryllium for the NAWCADTRN site is the maximum beryllium value detected in background soil borings (5.6 mg/kg).

2. N.J. Soil Cleanup Criteria: No single soil sample exceeds the applicable soil cleanup standard by a factor of more than:

- i. 10 for a soil standard of less than or equal to 10 ppm.
- ii. 5 for a soil standard greater than 10 but less than 100 ppm.



**Table 1-3 - Site 1**  
**VOC Soil Sampling Results That Exceeded NJSCC**

Sample ID	Trichloroethene (ug/kg)	1,2-Dichloroethene (ug/kg)
PSV-SB-17 (4-4.5')	250 J	1,100 J
PSV-SB-18 (0.5-1')	710,000 E	890,000 E
PSV-SB-19 (3.5-4')	420 J	5,200
PSV-SB-23 (1.5-2')	1,000	780 U
PSV-SB-26 (4-4.5')	7,500	4,600
PSV-SB-28 (3.5-4')	25,000	750 J
PSV-SB-30 (3.5-4')	4,100	-
PSV-SB-31 (0.5-1')	1,400	-
PSV-SB-33 (4-4.5')	430,000 D	17,000 JD
SB-44 (2.5-3')	3,300	2,400
SB-45 (0.5-1')	1,900	990
SB-48 (4-4.5')	820 U	2,600
NJDEP Residential Soil Cleanup Criteria	23,000	1,000,000 (trans) 79,000 (cis)
NJDEP Non-Residential Soil Cleanup Criteria	54,000	1,000,000
NJDEP Impact to Groundwater Cleanup Criteria	1,000	50,000 (trans) 1,000 (cis)

D - Compound identified at a secondary dilution factor

E - Compounds whose concentrations exceeded the calibration range of the GC/MS for that specific analysis; if one or more compounds have a response greater than the calibration range, the sample or extract is diluted and reanalyzed.

J - Estimated value

U - Compound analyzed for but not detected

TABLE 2-1 SUMMARY AND RATIONALE FOR IR PROGRAM SITE 1 SOIL SAMPLING  
NAWC TRENTON

Soil Boring	Surface Condition	Completion Depth (ft bgs)	Sample Interval (ft bgs)	Rationale for Soil Boring Installation and Sampling
PSV-SB-7	Gravel	3.5	3.0 - 3.5	Elevated passive soil vapor VOC concentration in the West Ditch Area.
PSV-SB-17	Gravel	4.5	4.0 - 4.5	Elevated soil vapor VOC concentration detected during the passive soil vapor survey and during the initial EBS Phase II SVA survey.
PSV-SB-18	Gravel	1.0	0.5 - 1.0	Elevated soil vapor VOC concentration detected during the passive soil vapor survey and during the initial EBS Phase II SVA survey.
PSV-SB-19	Gravel	4.5	3.5 - 4.0	Elevated soil vapor VOC concentration detected during the passive soil vapor survey and during the initial EBS Phase II SVA survey.
PSV-SB-20	Concrete	6.0	3.5 - 4.0	Elevated soil vapor VOC concentration detected during the passive soil vapor survey.
PSV-SB-22	Gravel	4.0	1.5 - 2.0	Elevated soil vapor VOC concentration detected during the passive soil vapor survey and during the initial EBS Phase II SVA survey.
PSV-SB-23	Gravel	5.5	1.5 - 2.0	Elevated soil vapor VOC concentration detected during the passive soil vapor survey.
PSV-SB-26	Gravel	6.0	4.0 - 4.5	Elevated soil vapor VOC concentration detected during the passive soil vapor survey.
PSV-SB-27	Gravel	5.2	3.5 - 4.0	Elevated soil vapor VOC concentration detected during the EBS Phase II SVA survey.
PSV-SB-28	Gravel	5.5	3.5 - 4.0	Elevated soil vapor VOC concentration detected during the passive soil vapor survey and during the initial EBS Phase II SVA survey.
PSV-SB-29	Gravel	4.5	3.0 - 3.5	Elevated soil vapor VOC concentration detected during the passive soil vapor survey and during the initial EBS Phase II SVA survey.
PSV-SB-30	Gravel	5.5	3.5 - 4.0	Elevated soil vapor VOC concentration detected during the passive soil vapor survey and during the initial EBS Phase II SVA survey.

Soil Boring	Surface Condition	Completion Depth (ft bgs)	Sample Interval (ft bgs)	Rationale for Soil Boring Installation and Sampling
PSV-SB-31	Gravel	2.0	0.5 - 1.0	Elevated soil vapor VOC concentration detected during the passive soil vapor survey and during the initial EBS Phase II SVA survey.
PSV-SB-32	Gravel	5.0	4.5 - 5.0	Elevated soil vapor VOC concentration detected during the EBS Phase II SVA survey.
PSV-SB-33	Gravel	5.0	4.0 - 4.5	Elevated soil vapor VOC concentration detected during the passive soil vapor survey and during the initial EBS Phase II SVA survey.
PSV-SB-34	Gravel	3.0	0.5 - 1.0	Elevated soil vapor VOC concentration detected during the passive soil vapor survey and during the initial EBS Phase II SVA survey.
PSV-SB-41	Gravel	6.0	5.5 - 6.0	Elevated soil vapor VOC concentration detected during the passive soil vapor survey.
SB-44	Gravel	3.0	2.5 - 3.0	Location selected at the direction of the Navy to further evaluate the potential impact of VOC on soil north of Building 40.
SB-45	Gravel	3.0	0.5 - 1.0	Location selected at the direction of the Navy to further evaluate the potential impact of VOC on soil north of Building 40.
SB-46	Gravel	4.5	3.5 - 4.0	Elevated soil vapor BTEX concentration detected during the EBS Phase II SVA survey.
SB-47	Gravel	5.5	1.5 - 2.0	Elevated soil vapor BTEX concentration detected during the EBS Phase II SVA survey.
SB-48	Gravel	5.5	4.0 - 4.5	Location selected at the direction of the Navy to evaluate the potential impact to soil resulting from a UST that had been abandoned and sealed in place.
SB-49	Gravel	4.0	3.5 - 4.0	Location selected at the direction of the Navy to further evaluate the free and/or residual product previously observed in the vicinity of the hydraulic unit.
SB-50	Gravel	8.0	7.5 - 8.0	Location selected at the direction of the Navy to further evaluate the free and/or residual product previously observed in the vicinity of the hydraulic unit.
SB-51	Gravel	9.0	6.5 - 7.0	Location selected at the direction of the Navy to further evaluate the potential presence of free and/or residual product in the vicinity of Building 48.

Soil Boring	Surface Condition	Completion Depth (ft bgs)	Sample Interval (ft bgs)	Rationale for Soil Boring Installation and Sampling
SB-52	Gravel	9.0	4.5 - 5.0	Location selected at the direction of the Navy to further evaluate the potential presence of free and/or residual product in the vicinity of Building 48.
SB-53	Gravel	6.0	4.5 - 5.0	Location selected at the direction of the Navy to further evaluate the potential presence of free and/or residual product in the vicinity of Building 48.
SB-54	Gravel	8.0	3.0 - 3.5	Location selected at the direction of the Navy to further evaluate the potential presence of free and/or residual product in the vicinity of Building 48.

**Appendix A**

**Public Meeting Attendance**

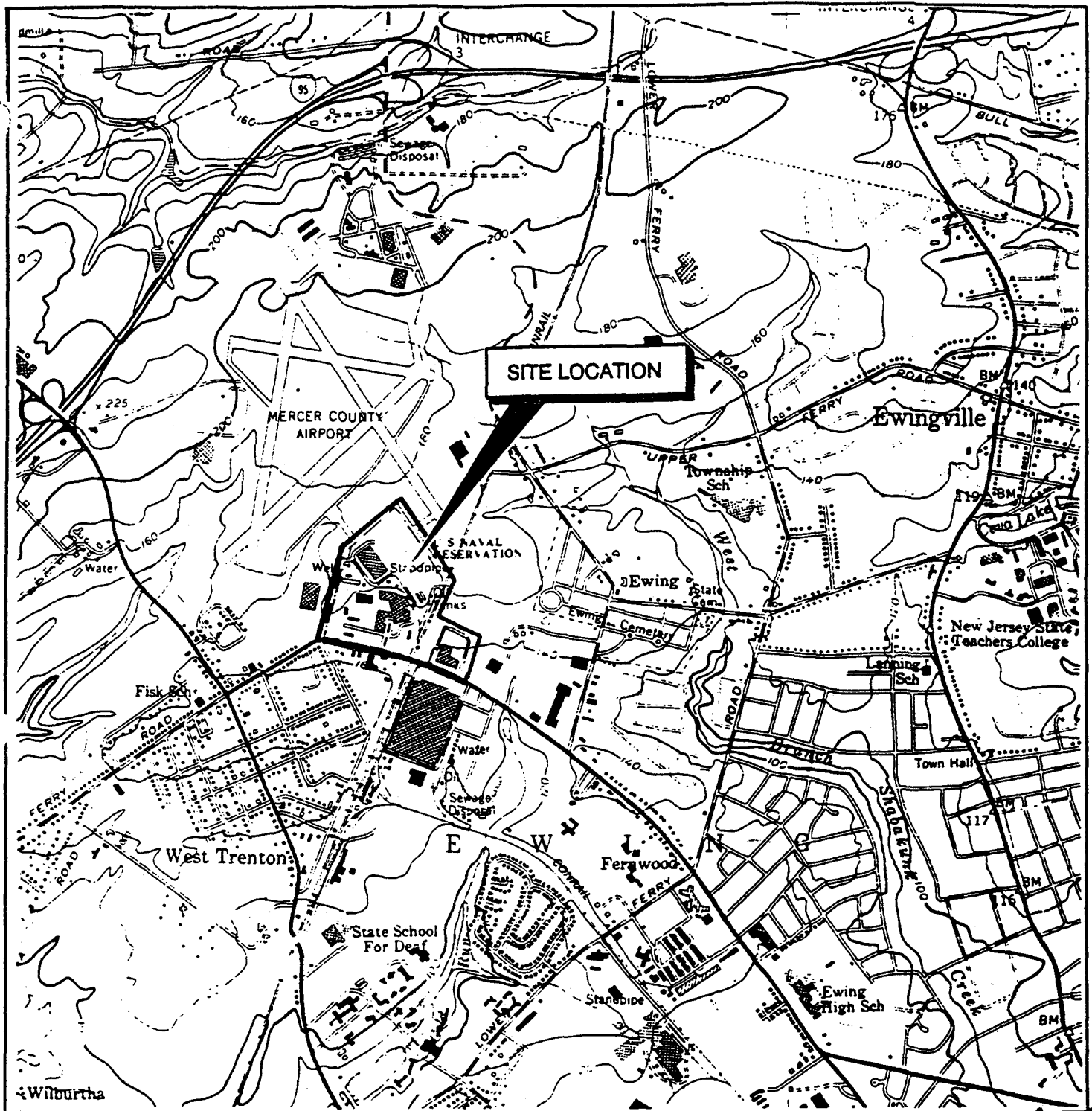
# PUBLIC MEETING SIGN-IN REGISTER

TOPIC: DRAFT DECISION DOCUMENT FOR SOIL REMOVAL ACTION AT  
INSTALLATION RESTORATION PROGRAM SITE 1

NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION  
TRENTON, NEW JERSEY

June 24, 1998, 8:00 AM  
Ewing Municipal Complex, Mercer County, New Jersey

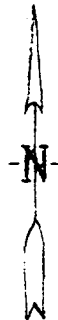
NAME	AFFILIATION / ADDRESS	PHONE
Robert Gordon	86 Woodland Ave Ewing NJ 08638 R/Y+13	
RONALD HARLOW	EA	
Mike Figura	NAES Lakehurst	
Jeff Dale	Northern Division	
ED BOYLE	NORTHERN DIVISION	
<del>Robert Gordon</del> HESTER COHEN	EWING	
Barry Barclay	NAWC	
CAPT Dave Offerdahl	NAWC	
Bill Lawler	U.S. EPA	
JOHN H. HARRISON	R.A.B.	
VINCE ORANI	RAB COCHAIR	
Bill Lewendowski	NAWC	
David Worrell	GMC	
RONALD HARWOOD	EA	
Danna L Giffigan	NSDET	



#### SOURCE

USGS 7.5 Minute Series Topographic Map,  
Quadrangle Pennington New Jersey  
Photorevised 1981

0 2000 4000  
SCALE OF FEET



REV No DATE DESCRIPTION OF REVISION REV BY ENGR CHKD BY APPVD BY  
PROJECT MANAGER B VOGEL DRAWN BY T MARTOS DATE 4-8-94

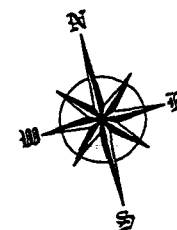
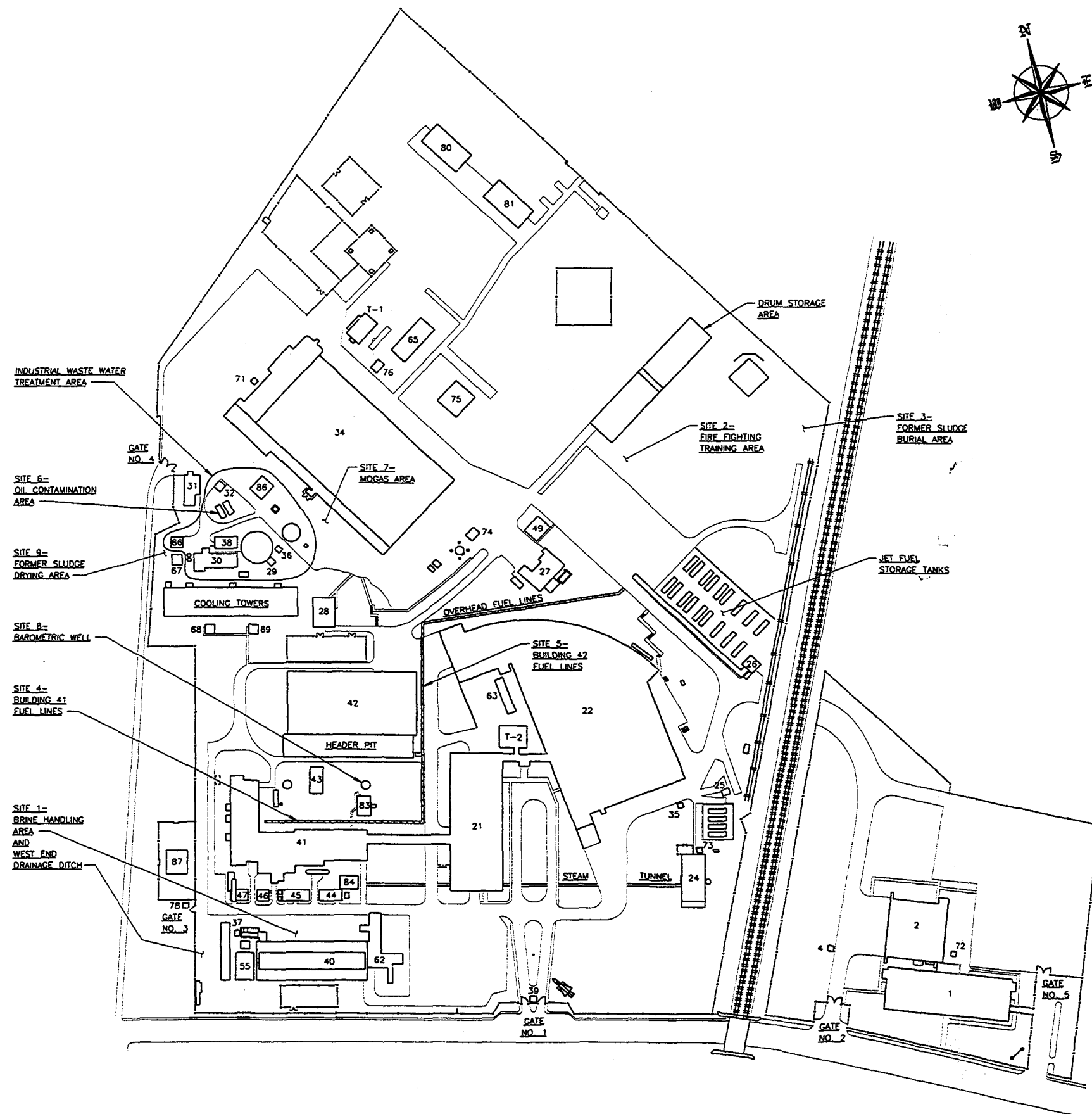


INTERNATIONAL  
TECHNOLOGY  
CORPORATION

FIGURE 1  
REGIONAL SITE LOCATION MAP  
NAVAL AIR WARFARE CENTER  
AIRCRAFT DIVISION TRENTON, NEW JERSEY  
Prepared for:

NAVAL FACILITIES ENGINEERING COMMAND  
NORTHERN DIVISION  
LESTER, PENNSYLVANIA

PROJECT No FILE No CHKD ENGR APPVD DRAWING NUMBER REV No  
529658 APR-94 APPVD 14/10/94 NAWC-23 P.1



100 0 100 200 300

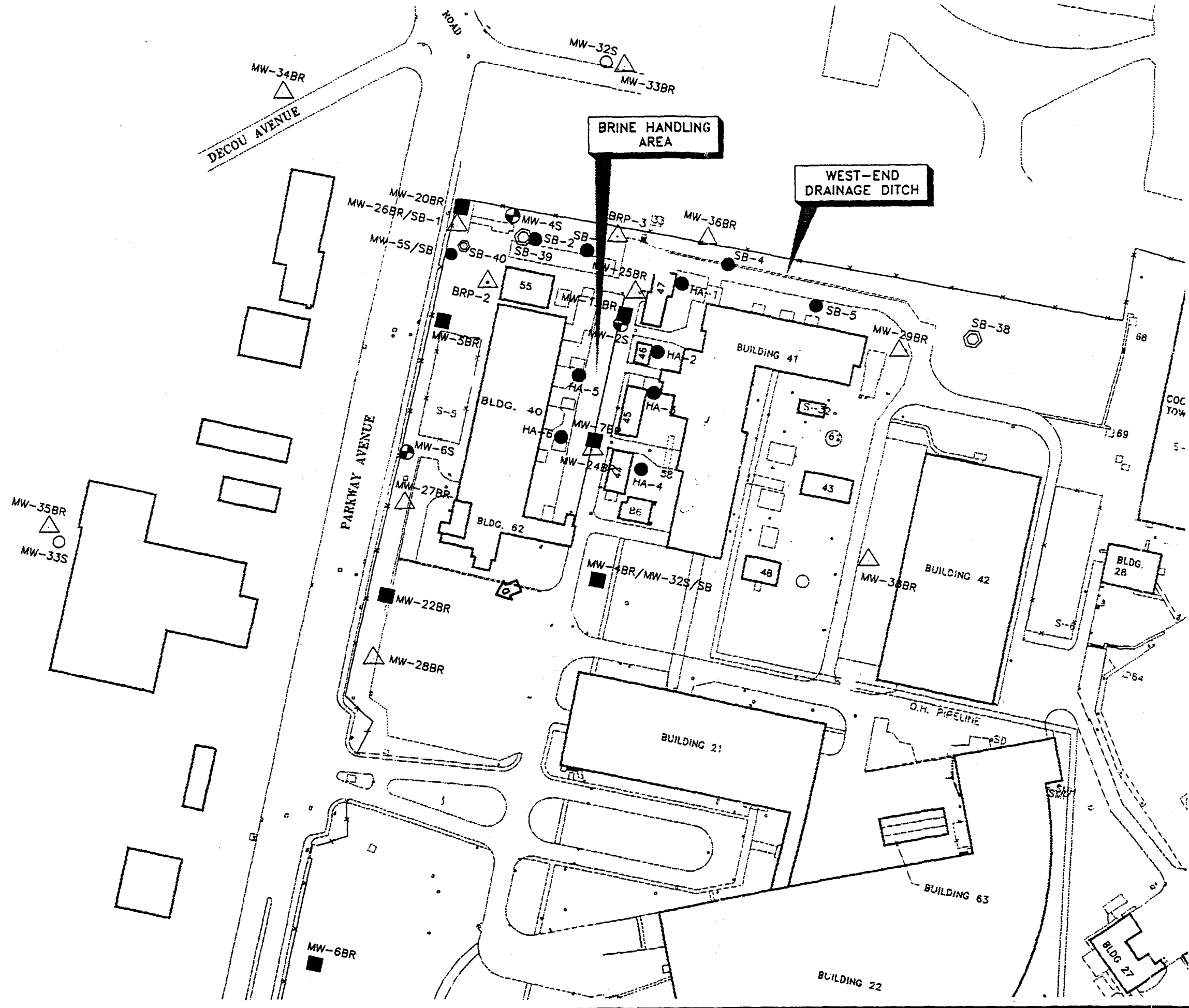
GRAPHIC SCALE

FIGURE 2

ZONE	LTR	DESCRIPTION	DATE	APPROVED
REVISIONS				
P.W. DWG. NO.	59000	DEPARTMENT OF THE NAVY, NAVAL FACILITIES ENGINEERING COMMAND		
MECH.	CIVIL	NAVAL AIR WARFARE CENTER, AIRCRAFT DIVISION		
ELEC.	ARCH.	TRENTON, NEW JERSEY		
DRAWN: MRM	DATE: 9-25-97	STATION MAP		
S.M.	F.C.	SHOWING		
PROJ. MAN. SUPV.		INSTALLATION RESTORATION		
D.P.W.O.		SITE LOCATIONS		
APPROVED	DATE	SIZE	CODE IDENT. NO.	NAVFAC DRAWING NO.
PUBLIC WORKS OFFICER		F	80091	2
SATISFACTORY TO		SCALE: GRAPHIC	SPEC.	SHEET 1 OF 1

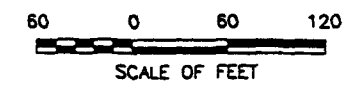
DWG NO. 59000





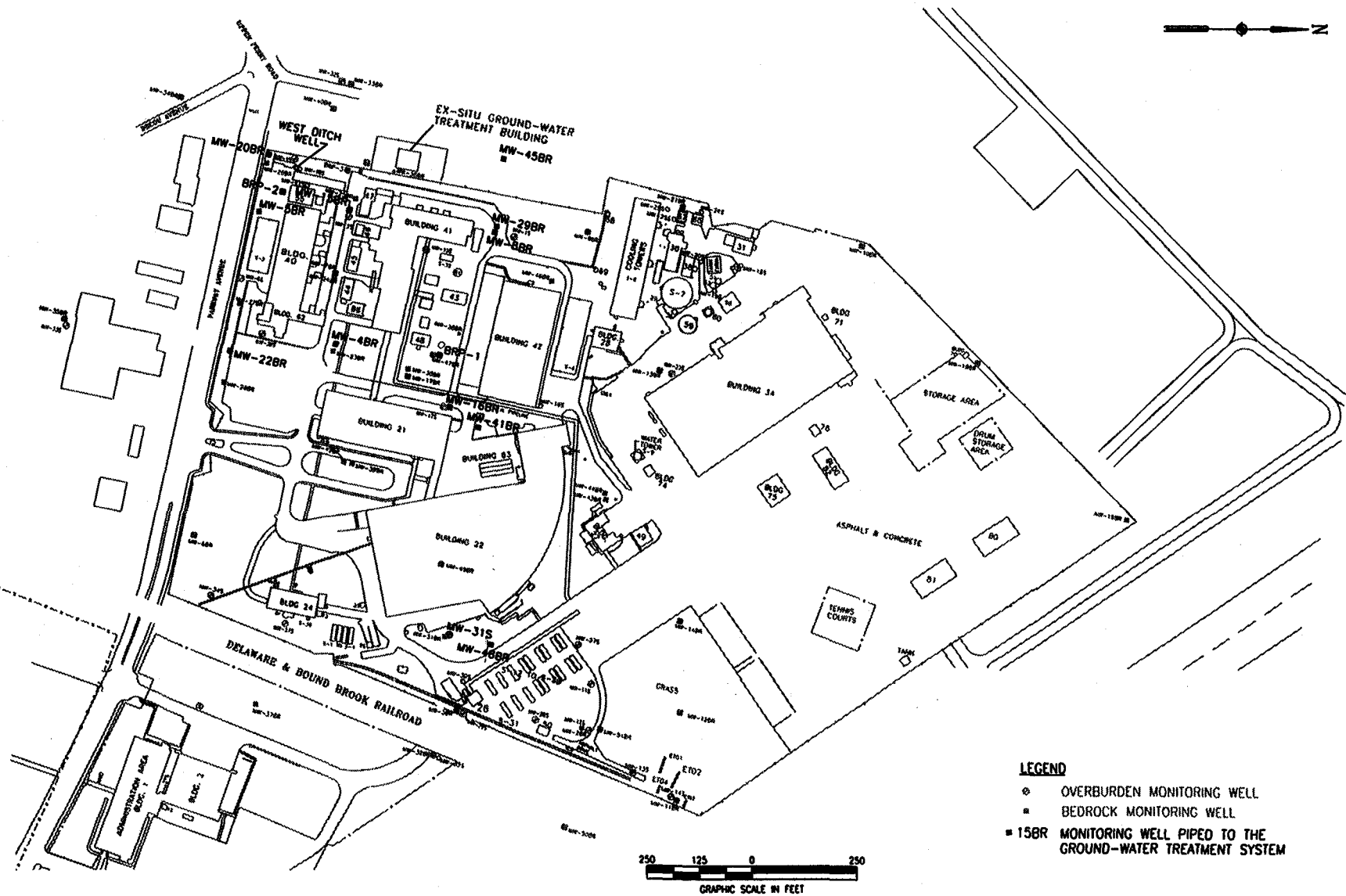
- LEGEND:**
- OVERBURDEN MONITORING WELL (INSTALLED 1988 AND 1990)
  - SITE INSPECTION STUDY SOIL BORING (1989)
  - PHASE I SOIL BORING (1992)
  - PHASE I BEDROCK MONITORING WELL (INSTALLED 1992)
  - PHASE II OVERBURDEN WELL (INSTALLED 1993)
  - △ PHASE II BEDROCK WELL (INSTALLED 1993)
  - △ PHASE II BEDROCK PIEZOMETER (INSTALLED 1993)

- SOURCES:**
1. WAYNE W. BURGETT, PLS, PP  
PLAN OF SURVEY-NAVAL AIR WARFARE CENTER  
TRENTON, NEW JERSEY. ELEVATIONS RELATIVE  
TO NORTH AMERICAN DATUM OF 1929 (NAD-29).  
HORIZONTAL LOCATIONS RELATIVE TO NEW JERSEY  
COASTAL AND GEODETIC SURVEY OF 1929 (NJCGSD-29).
  2. SITE PLAN AND SITE LOCATION MAP  
NAVAL AIR PROPULSION CENTER, TRENTON,  
NEW JERSEY, NAVFAC NORTH DIV  
PHILA, PA.



1	10/24/94	ADDED GW FLOW	M.S.M.				
0	6/10/94	A TO B SHEET CHANGE	M.S.M.	J.D.	J.S.A.	B.V.	
REV. NO.	DATE	DESCRIPTION OF REVISION	REV. BY	CHK	CHK BY	DATE	BY
PROJECT MANAGER	B. VOGEL	DRAWN BY	DWG			DATE	3/5/94
<b>FIGURE 3</b> SITE 1-BRINE HANDLING AREA AND WEST-END DRAINAGE DITCH NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION TRENTON, NEW JERSEY Prepared For: NAVAL FACILITIES ENGINEERING COMMAND NORTHERN DIVISION LESTER, PENNSYLVANIA							
PROJECT NO.	FILE NO.	DATE	DRAWN BY	DATE	PROJECT NO.	FILE NO.	DATE
529538	A3				529538-A3		1

\\engfiles\reding\529538\529538a3 10/21/94 8:54am M.S.M.



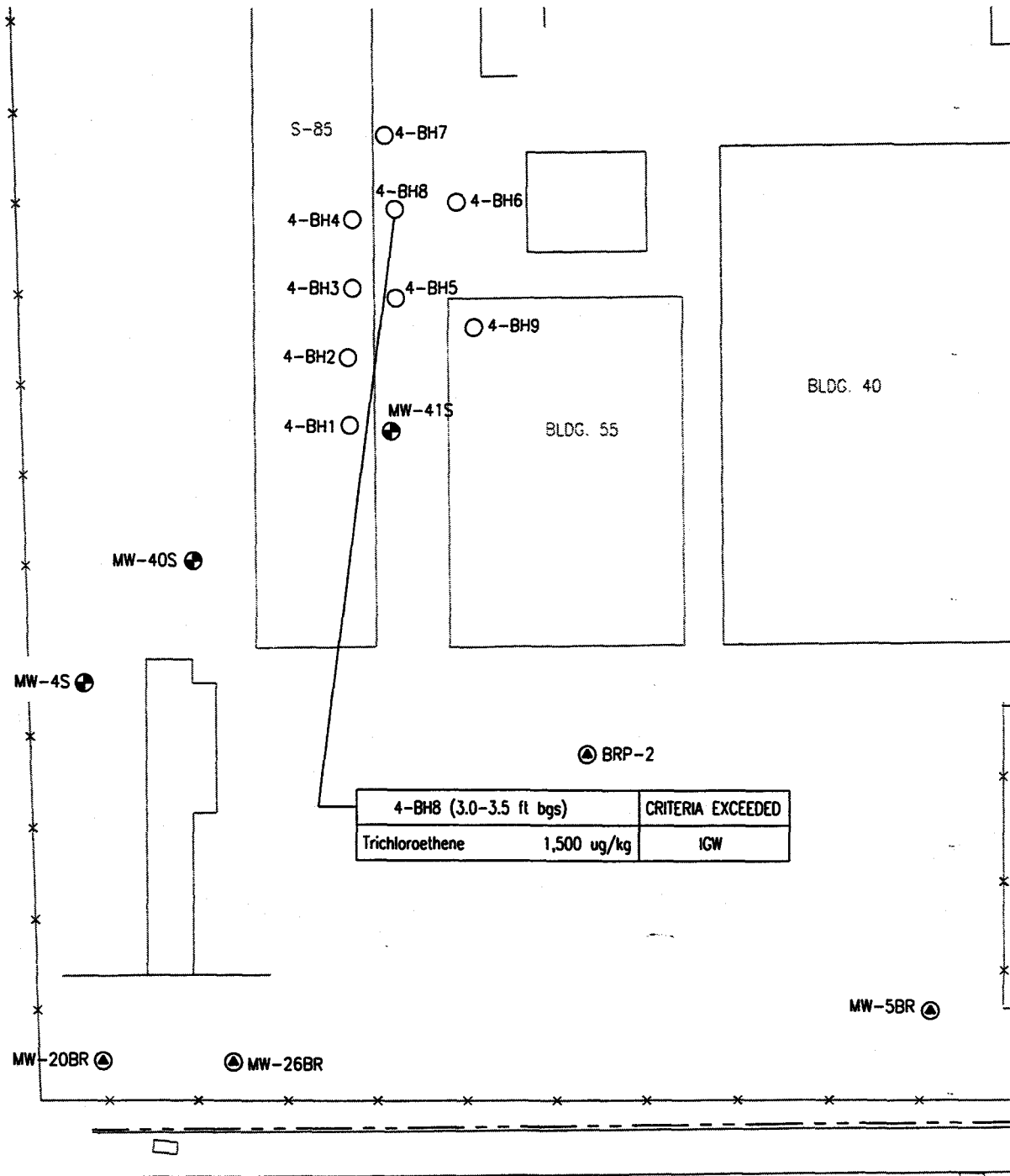
EA ENGINEERING,  
SCIENCE, AND  
TECHNOLOGY

NAWC - TRENTON  
TRENTON, NEW JERSEY

EXISTING GROUND-WATER  
RECOVERY SYSTEM

FIGURE  
4





### LEGEND

○ SOIL BORING SAMPLE LOCATION

● OVERBURDEN MONITORING WELL

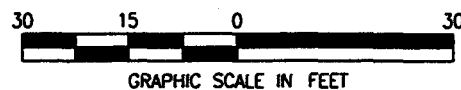
⊕ BEDROCK MONITORING WELL

--- PARCEL BOUNDARY

R NJDEP RESIDENTIAL SOIL CRITERIA

ICW NJDEP IMPACT TO GROUND WATER SOIL CRITERIA

PARKWAY AVENUE



NOTE: DATA QUALIFIERS ARE DEFINED IN TABLE 2.4-1.



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TECHNOLOGY

EBS PHASE II  
NAWC TRENTON  
TRENTON, NEW JERSEY

AREA OF CONCERN 4  
(BUILDING 55  
FUEL CONTROL TEST FACILITY)  
SOIL SAMPLE  
RESULTS ABOVE CRITERIA

PROJECT MGR  
SF

DESIGNED BY  
JD

DRAWN BY  
MM

CHECKED BY  
RH

SCALE  
AS SHOWN

DATE  
8-7-97

PROJECT NO  
29600.48

FIGURE  
6

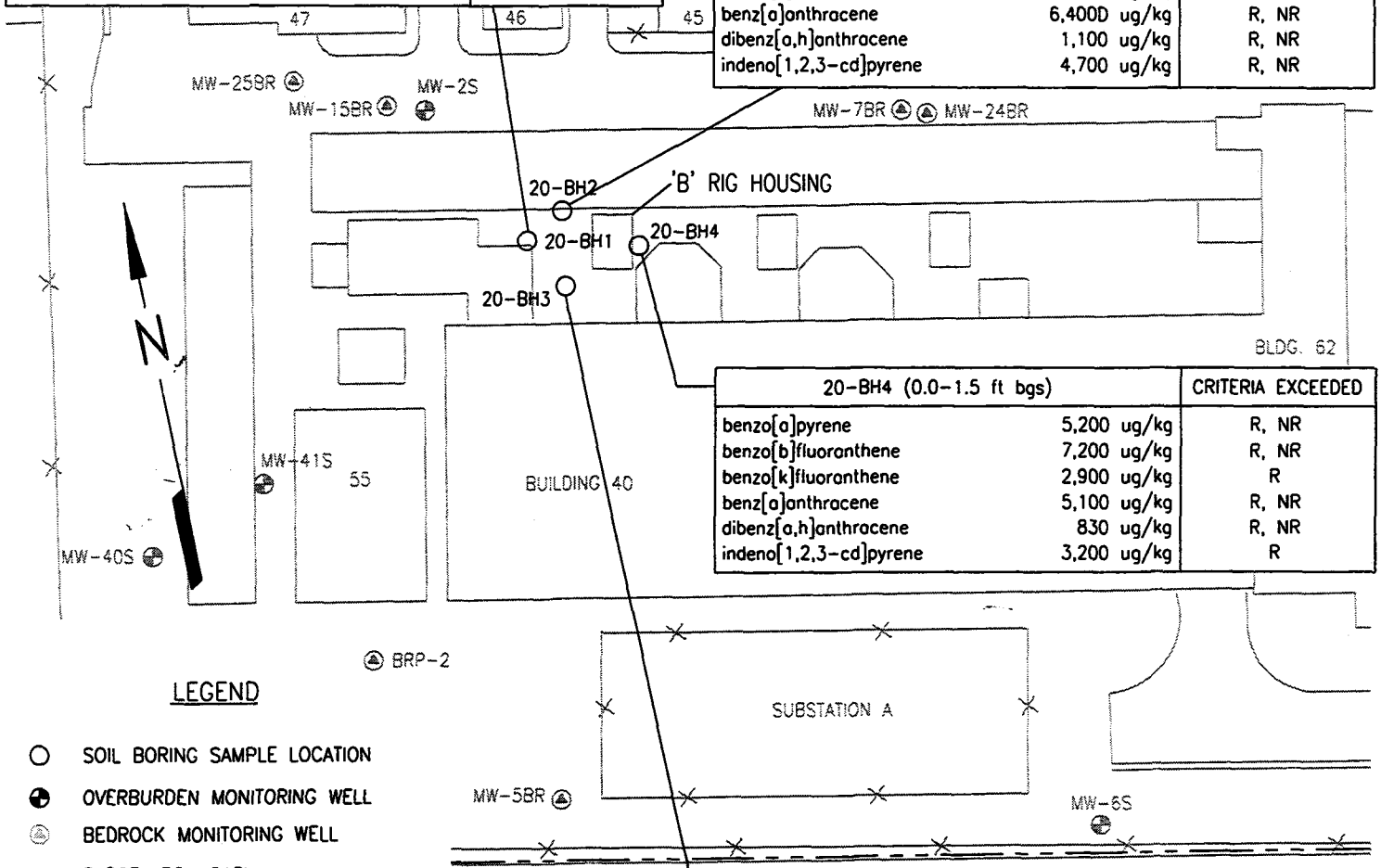
20-BH1 (0.0-1.5 ft bgs)		CRITERIA EXCEEDED
benzo[a]pyrene	16,000 ug/kg	R, NR
benzo[b]fluoranthene	22,000 ug/kg	R, NR
benzo[k]fluoranthene	8,500 ug/kg	R, NR
benz[a]anthracene	17,000 ug/kg	R, NR
chrysene	17,000 ug/kg	R
dibenz[a,h]anthracene	3,200 ug/kg	R, NR
indeno[1,2,3-cd]pyrene	8,900 ug/kg	R, NR

20-BH1 (1.5-3.0 ft bgs)		CRITERIA EXCEEDED
benzo[a]pyrene	2,600 ug/kg	R, NR
benzo[b]fluoranthene	3,700 ug/kg	R
benzo[k]fluoranthene	1,300 ug/kg	R
benz[a]anthracene	2,700 ug/kg	R
indeno[1,2,3-cd]pyrene	1,800 ug/kg	R

BUILDING 41

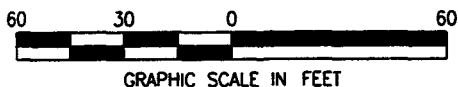
20-BH2 (0.0-1.5 ft bgs)		CRITERIA EXCEEDED
benzo[a]pyrene	37,000D ug/kg	R, NR
benzo[b]fluoranthene	51,000D ug/kg	R, NR, IGW
benzo[k]fluoranthene	16,000D ug/kg	R, NR
benz[a]anthracene	35,000D ug/kg	R, NR
chrysene	35,000D ug/kg	R
dibenz[a,h]anthracene	4,400D ug/kg	R, NR
indeno[1,2,3-cd]pyrene	18,000D ug/kg	R, NR

20-BH2 (1.5-3.5 ft bgs)		CRITERIA EXCEEDED
benzo[a]pyrene	7,000D ug/kg	R, NR
benzo[b]fluoranthene	10,000D ug/kg	R, NR
benzo[k]fluoranthene	4,000 ug/kg	R, NR
benz[a]anthracene	6,400D ug/kg	R, NR
dibenz[a,h]anthracene	1,100 ug/kg	R, NR
indeno[1,2,3-cd]pyrene	4,700 ug/kg	R, NR



# LEGEND

- SOIL BORING SAMPLE LOCATION
- OVERBURDEN MONITORING WELL
- ⊙ BEDROCK MONITORING WELL
- PARCEL BOUNDARY
- R NJDEP RESIDENTIAL SOIL CRITERIA
- NR NJDEP NON-RESIDENTIAL SOIL CRITERIA
- IGW NJDEP IMPACT TO GROUND WATER SOIL CRITERIA



NOTE: DATA QUALIFIERS ARE DEFINED IN TABLE 2.4-1.

20-BH3 (0.0-1.5 ft bgs)		CRITERIA EXCEEDED
benzo[a]pyrene	5,100 ug/kg	R, NR
benzo[b]fluoranthene	7,200D ug/kg	R, NR
benzo[k]fluoranthene	2,500 ug/kg	R
benz[a]anthracene	4,900 ug/kg	R, NR
dibenz[a,h]anthracene	1,100 ug/kg	R, NR
indeno[1,2,3-cd]pyrene	3,900 ug/kg	R

20-BH3 (1.5-3.0 ft bgs)		CRITERIA EXCEEDED
benzo[a]pyrene	1,000 ug/kg	R, NR
benzo[b]fluoranthene	1,300 ug/kg	R

PARKWAY AVENUE

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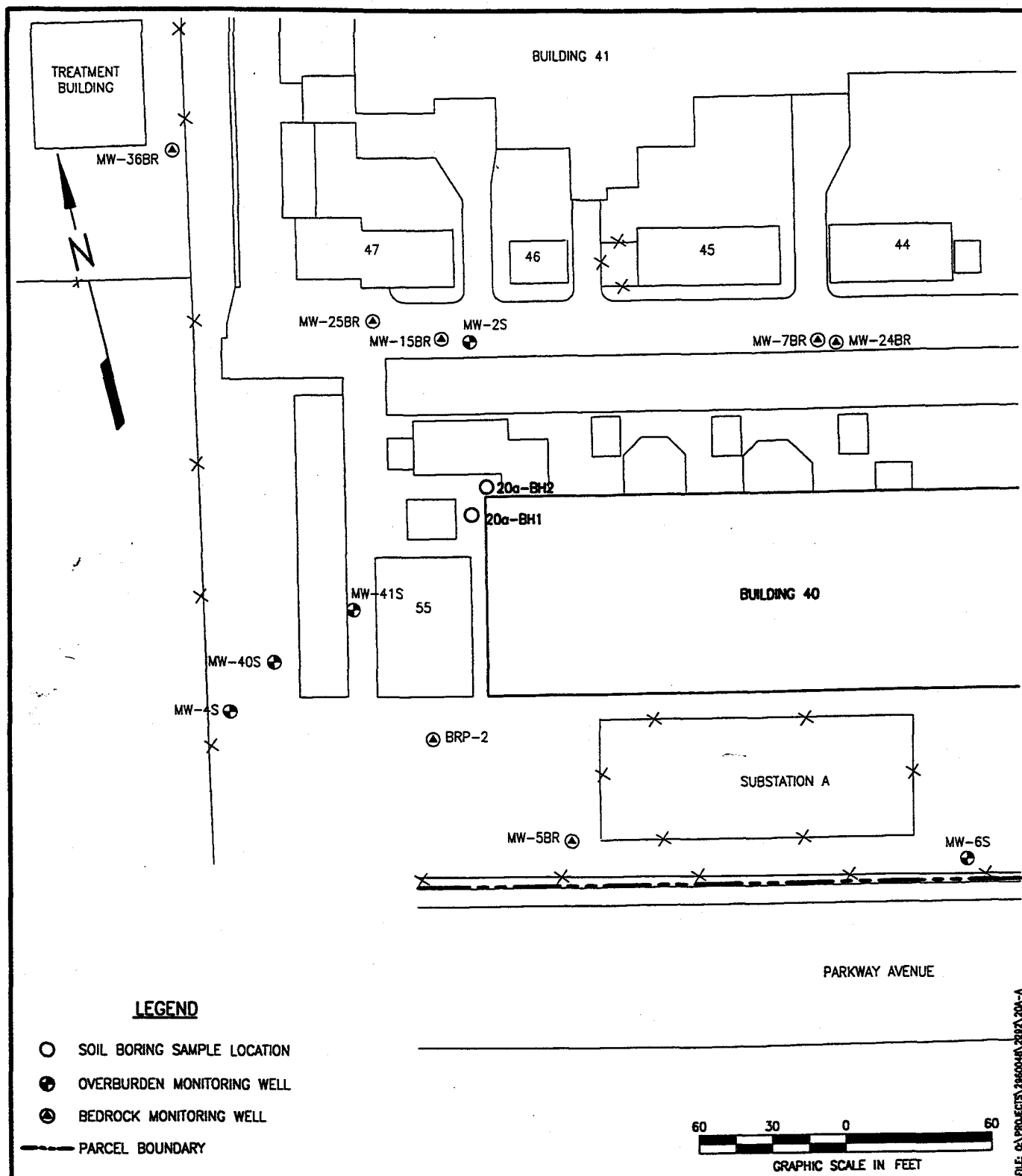


EA ENGINEERING,  
SCIENCE, AND  
TECHNOLOGY

EBS PHASE II  
NAWC TRENTON  
TRENTON, NEW JERSEY

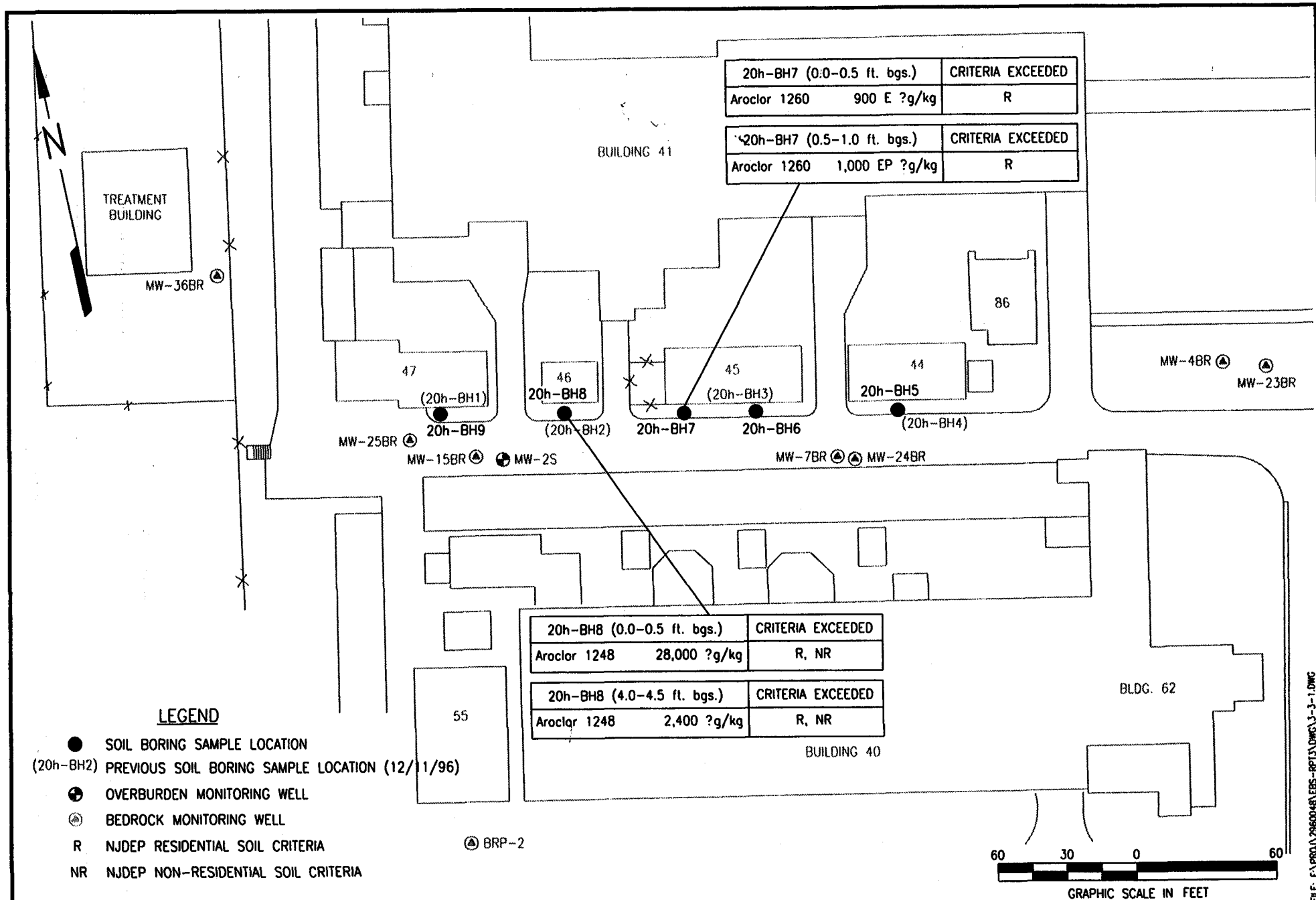
AREA OF CONCERN 20  
( 'B' RIG HOUSING FLOORS  
AND SURROUNDING AREA)  
SOIL SAMPLE  
RESULTS ABOVE CRITERIA

PROJECT MGR SF	DESIGNED BY JD	DRAWN BY MM	CHECKED BY RH	SCALE AS SHOWN	DATE 8-7-97	PROJECT NO 29600.48	FIGURE 7
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FILE: G:\PROJECTS\2960048\2007\201-A

<b>EA</b> EA ENGINEERING, SCIENCE, AND TECHNOLOGY			EBS PHASE II NAWC TRENTON TRENTON, NEW JERSEY			AREA OF CONCERN 20a (BUILDING 40 NORTHWEST CORNER) SOIL SAMPLE LOCATIONS	
PROJECT MGR SF	DESIGNED BY JD	DRAWN BY MM	CHECKED BY RH	SCALE AS SHOWN	DATE 8-7-97	PROJECT NO 29600.48	FIGURE 8



FILE: F:\PROJ\2960048\EBS-RPT\3-DWG\3-3-1.DWG



EA ENGINEERING,  
SCIENCE, AND  
TECHNOLOGY

EBS PHASE II  
SUPPLEMENTAL INVESTIGATION  
NAWC TRENTON  
TRENTON, NEW JERSEY

AREA OF CONCERN 20h  
(BRINE HOUSES)  
SOIL SAMPLE LOCATIONS  
AND RESULTS ABOVE CRITERIA

DESIGNED BY  
RH

CHECKED BY  
RH

DRAWN BY  
FDV

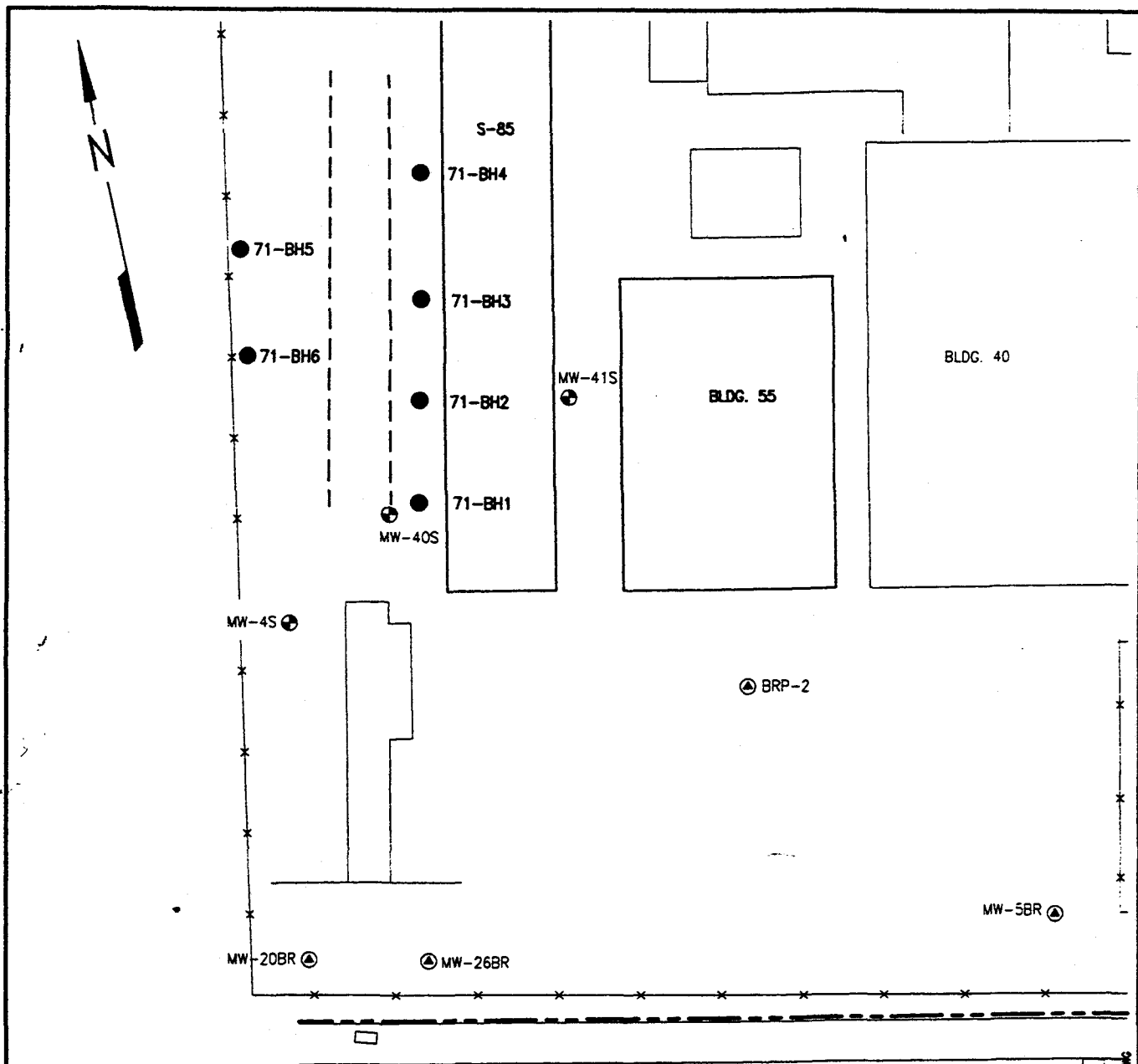
PROJECT MGR.  
SF

DATE  
1-13-98

SCALE  
AS SHOWN

PROJECT NO.  
29600.48

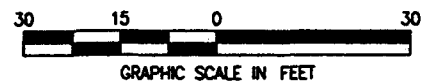
FIGURE  
9



### LEGEND

- SOIL BORING SAMPLE LOCATION
- ⊕ OVERBURDEN MONITORING WELL
- ⊙ BEDROCK MONITORING WELL
- APPROXIMATE LOCATION OF EXCAVATION

PARKWAY AVENUE



EA ENGINEERING,  
SCIENCE, AND  
TECHNOLOGY

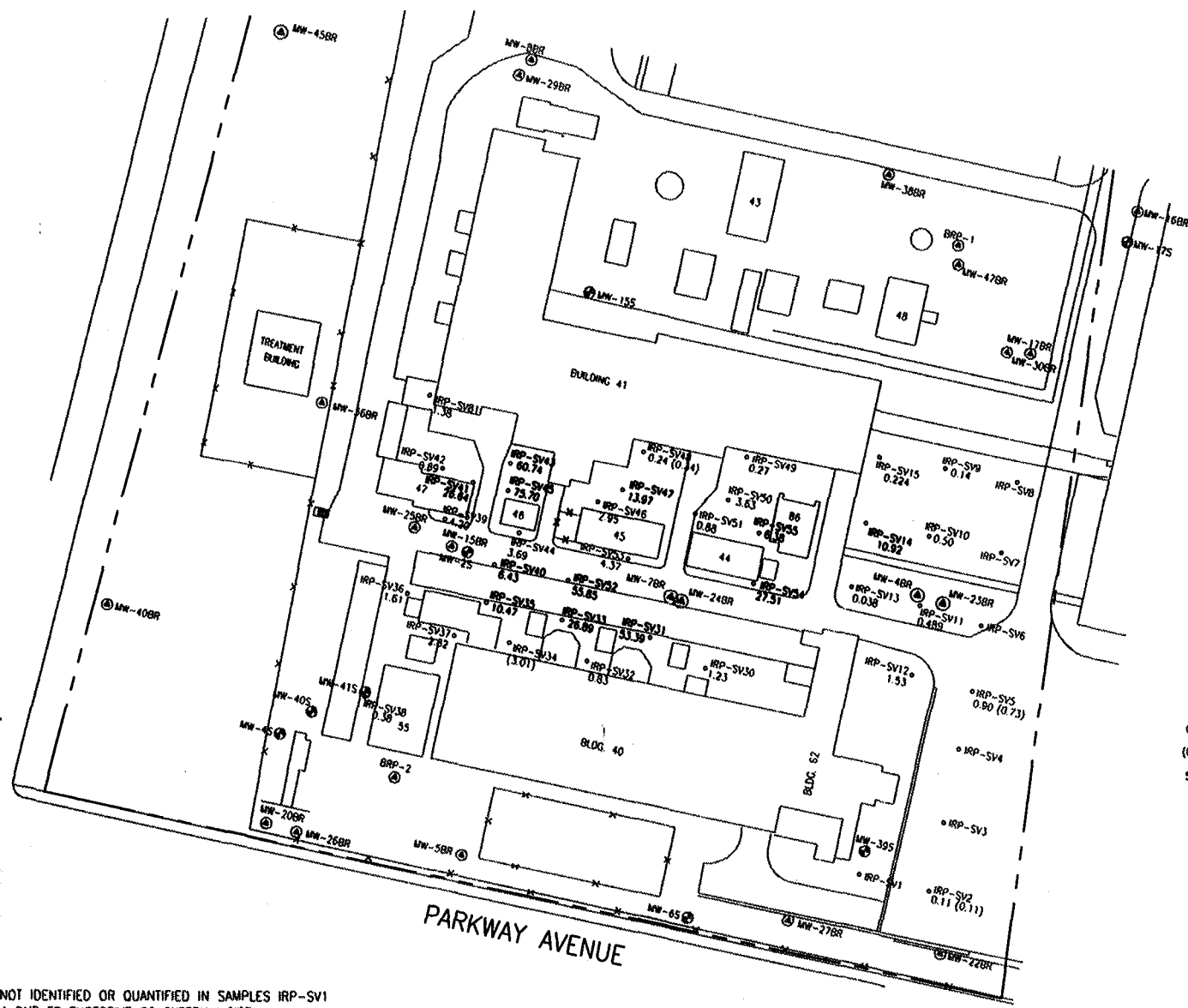
EBS PHASE II  
SUPPLEMENTAL INVESTIGATION  
NAWC TRENTON  
TRENTON, NEW JERSEY

AREA OF CONCERN 71  
(WEST DITCH AREA)  
SOIL SAMPLE LOCATIONS

PROJECT MGR SF	DESIGNED BY RH	DRAWN BY FDV	CHECKED BY RH	SCALE AS SHOWN	DATE 1-14-98	PROJECT NO 29600.48	FIGURE 10
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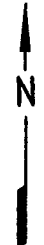
FILE: F:\PROJ\29600.48\EBS-RPT\DWG\3-13-1.DWG





**LEGEND**

- PREVIOUS SVA SAMPLE LOCATION
- ⊙ OVERBURDEN MONITORING WELL
- ⊕ BEDROCK MONITORING WELL
- 0.24 SOIL VAPOR SAMPLE CONCENTRATION (ppm)
- (0.34) DUPLICATE SOIL VAPOR SAMPLE CONCENTRATION (ppm)
- 55.85 ELEVATED SOIL VAPOR SAMPLE CONCENTRATION (ppm)



NOTE: COMPOUNDS NOT IDENTIFIED OR QUANTIFIED IN SAMPLES IRP-SV1 AND IRP-SV34 DUE TO EXCESSIVE GC SYSTEM NOISE.

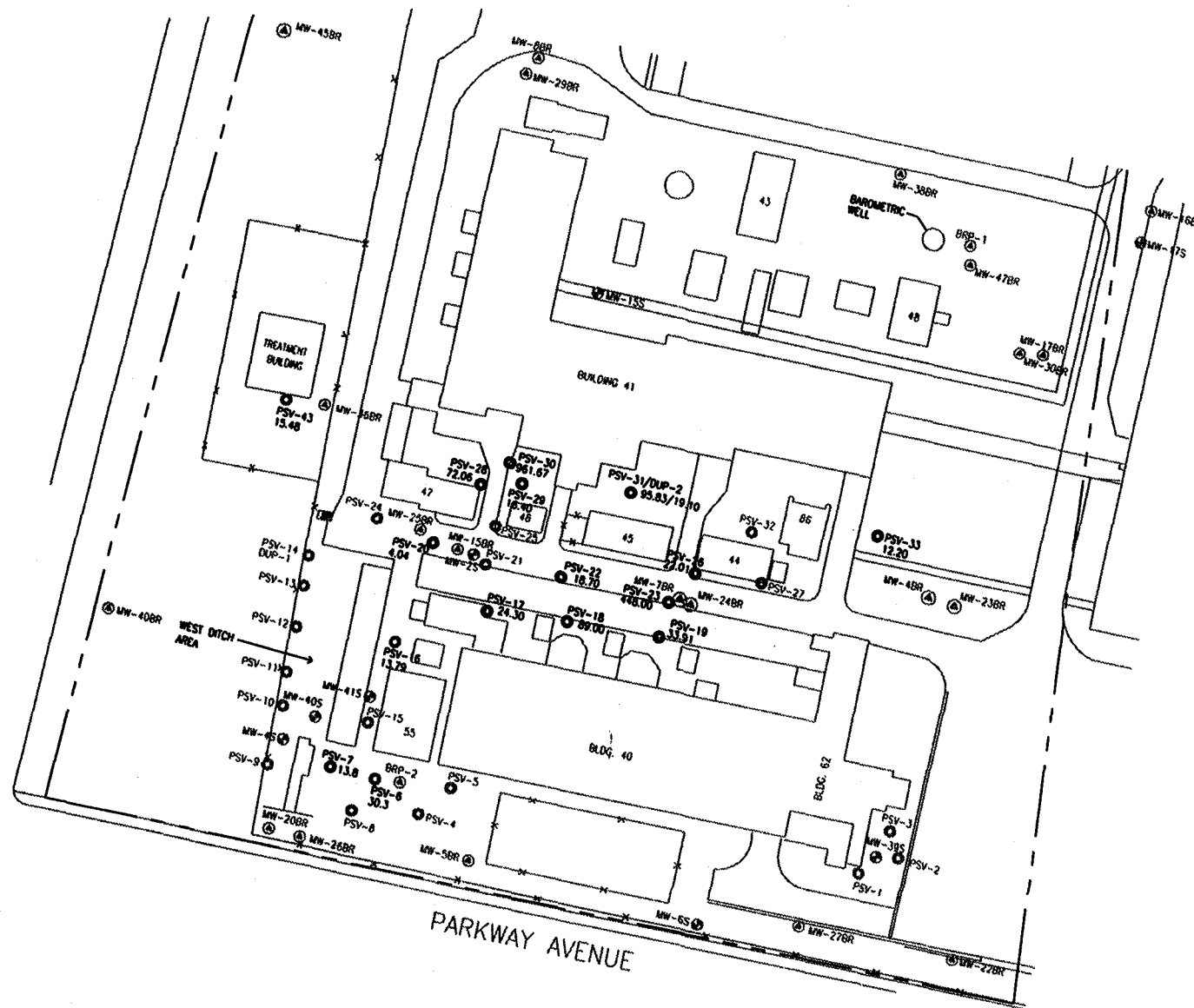


DRAWING MODIFIED FROM DRAFT  
IRP SITE 1 SOURCE SAMPLING REPORT  
NAWC TRENTON  
TRENTON, NEW JERSEY

IR PROGRAM SITE 1 SVA SURVEY  
25 SEPTEMBER TO 10 OCTOBER, 1996

FIGURE  
11

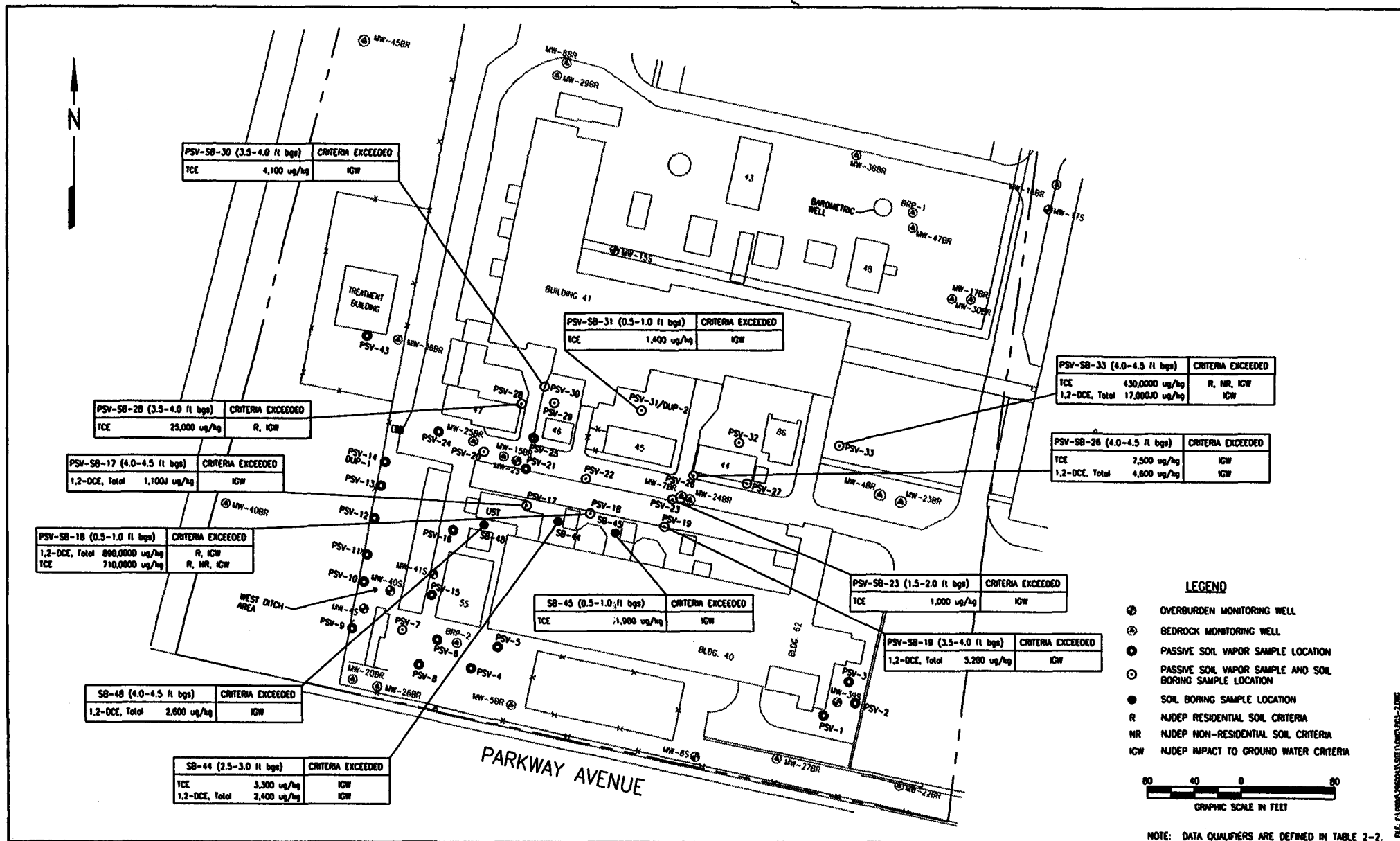
FILE: F:\VIA\CHINA\SHEET\UNITS\FIG-11.DWG



# LEGEND

- ① OVERBURDEN MONITORING WELL
- ② BEDROCK MONITORING WELL
- ③ PASSIVE SOIL VAPOR SAMPLE LOCATION
- 33.91 PASSIVE SOIL VAPOR SAMPLE TOTAL VOC CONCENTRATION (ug/L)





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TECHNOLOGY

DRAWING MODIFIED FROM DRAFT  
IRP SITE 1 SOURCE SAMPLING REPORT  
NAWC TRENTON  
TRENTON, NEW JERSEY

SOIL SAMPLE RESULTS ABOVE CRITERIA

FIGURE  
13

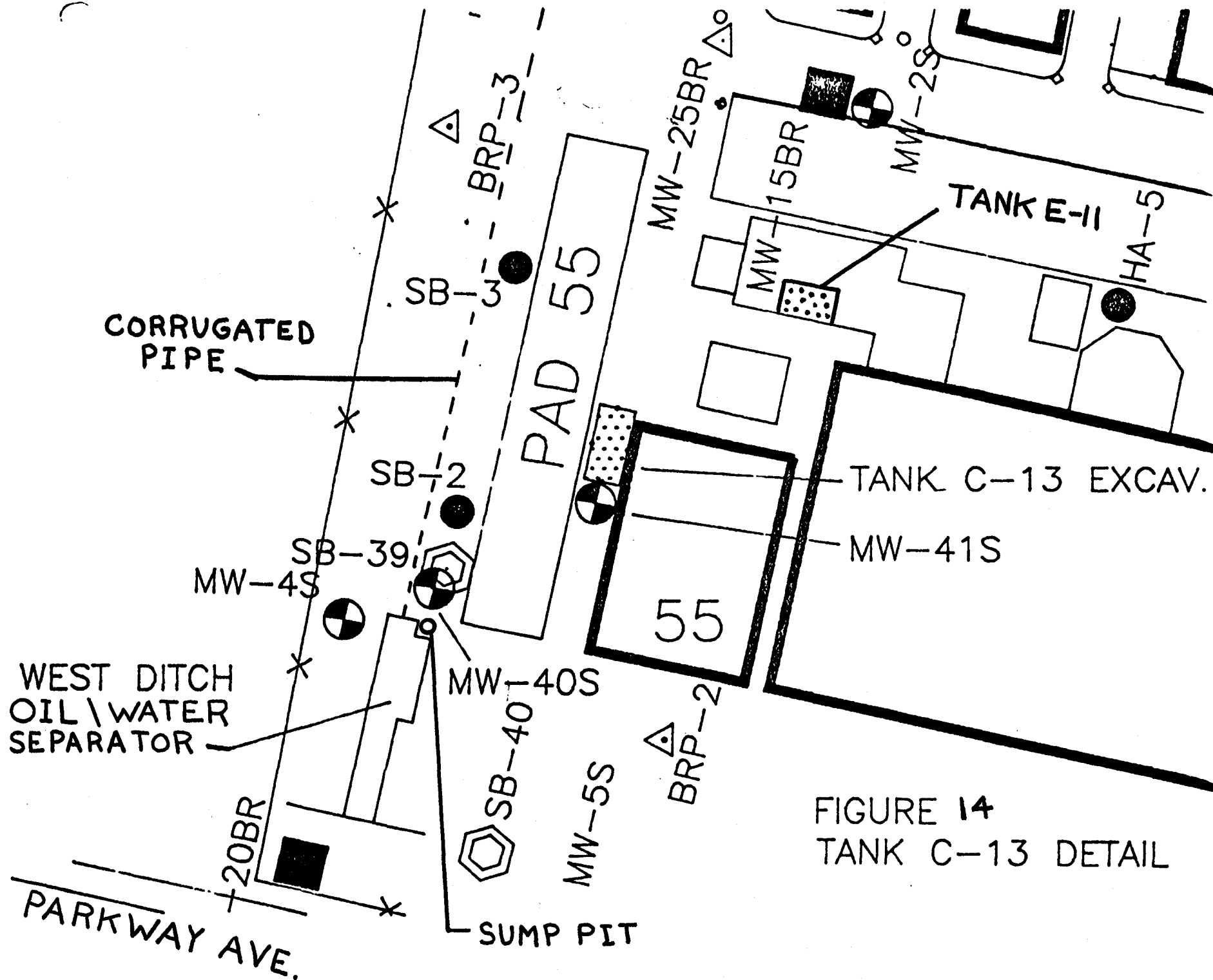
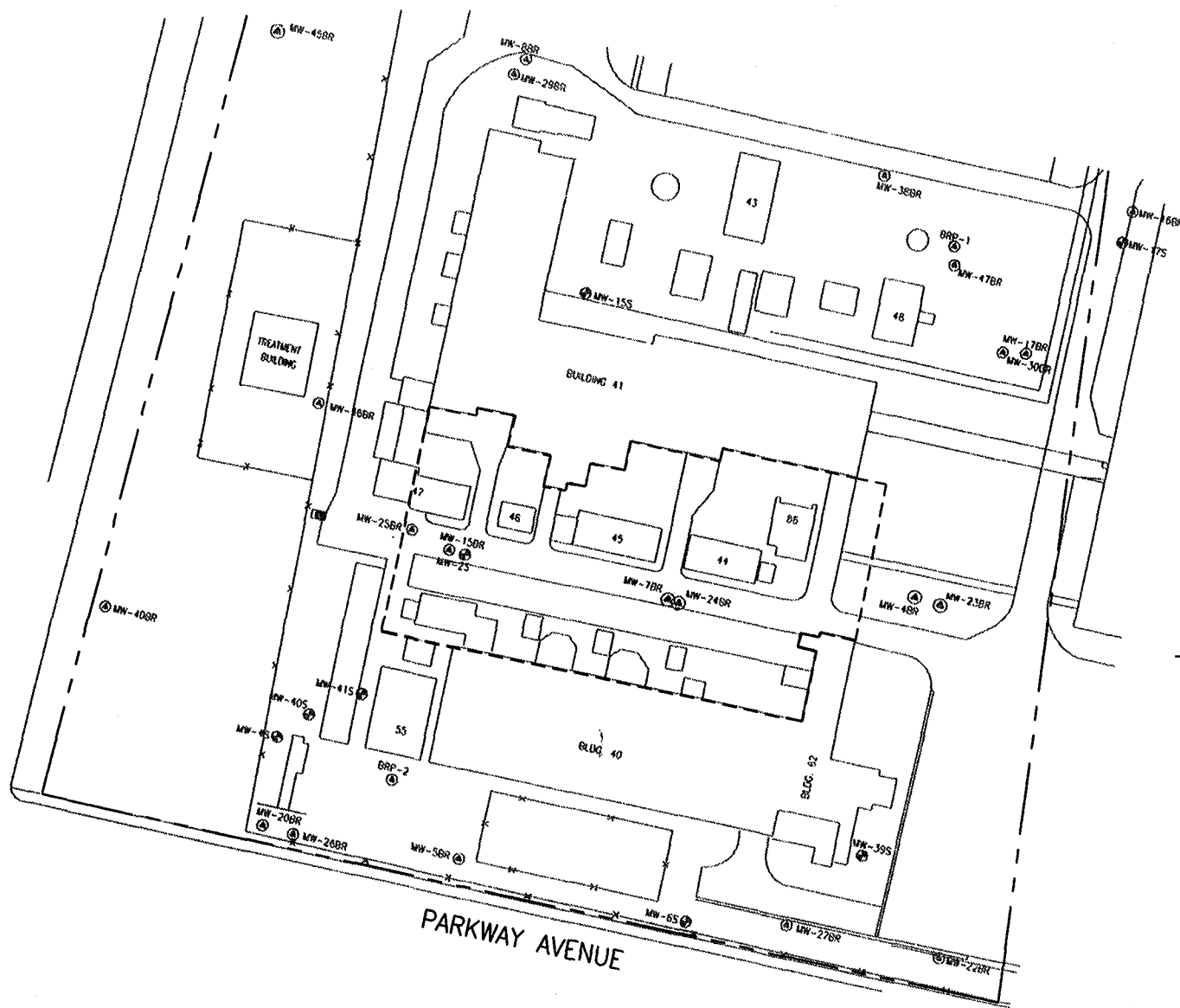


FIGURE 14  
TANK C-13 DETAIL



# LEGEND

- PROPOSED AREA TO BE EXCAVATED
- ⊙ OVERBURDEN MONITORING WELL
- ⊗ BEDROCK MONITORING WELL



NAVAL AIR WARFARE CENTER  
AIRCRAFT DIVISION  
TRENTON, NEW JERSEY

SITE 1  
NAWC TRENTON

PROPOSED EXTENT OF EXCAVATION

FIGURE  
15